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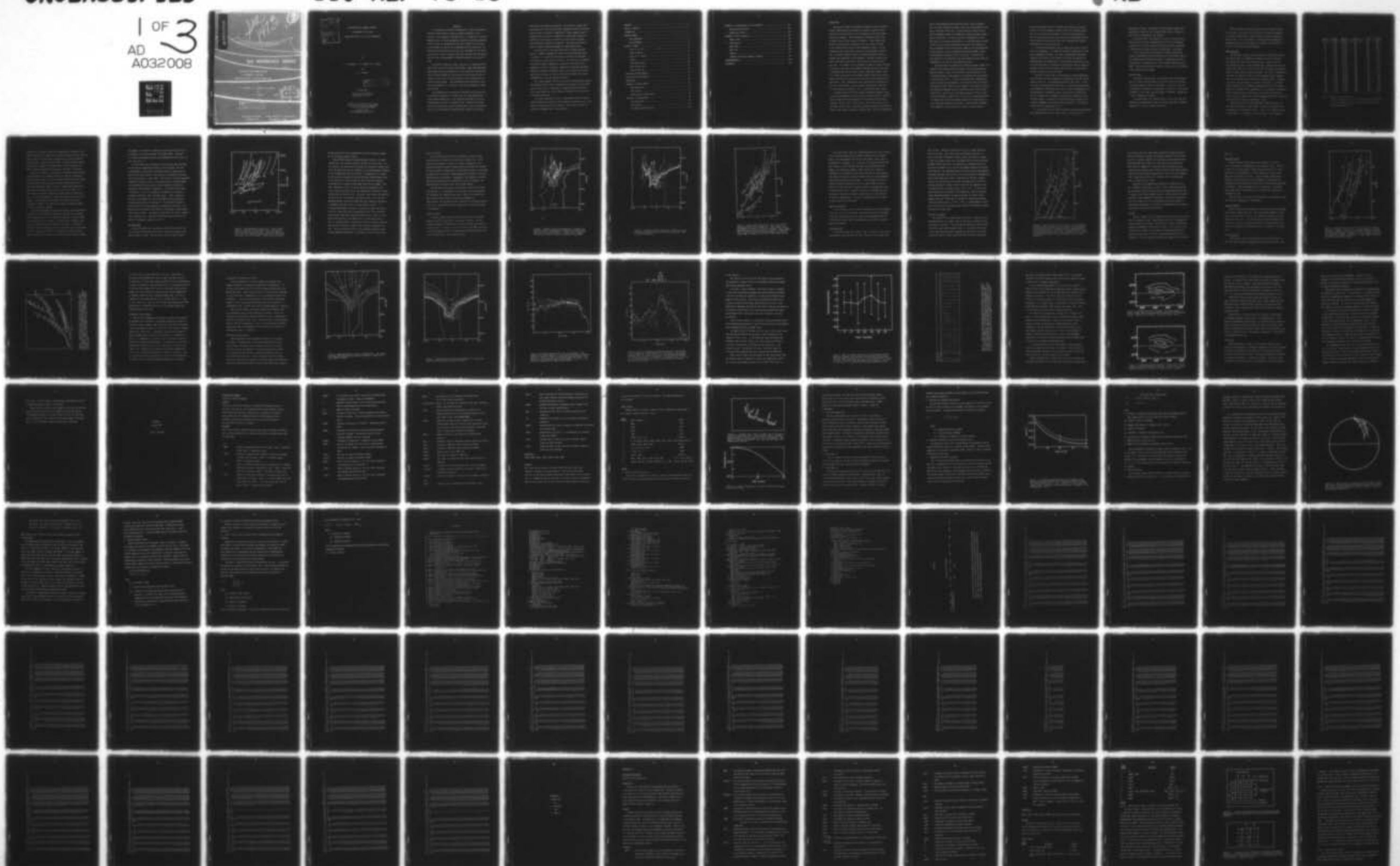

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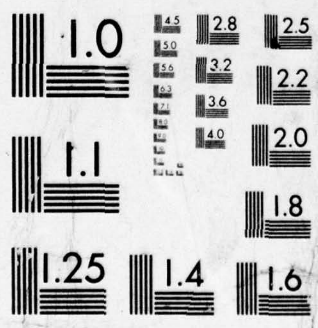

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BACKTRACKING AND FORWARD-TRACKING OF SEDIMENTS IN THE EAST EQUATORIAL PACIFIC: A TEST OF ASSUMPTIONS

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ABSTRACT

Six assumptions concerning sedimentation in the east equatorial Pacific are discussed or tested by computer modeling or error analysis. The assumptions considered are: (1) depth and latitude of deposition are the prime independent variables controlling sedimentation, (2) rates of sedimentation have been constant since the end of the Eocene, (3) erosion and resedimentation are unimportant, (4) fertility and dissolution do not vary with longitude, (5) the motion of the Pacific plate is known and has been constant since the Eocene, and (6) errors in measurement of sediment properties are insignificant.

Two numerical models are used in the test -- a forward-tracking model (ESP) and a back-tracking model (ROPH). Model ROPH determines the paleolatitude and paleodepth of a site occupied by the Deep Sea Drilling Project (DSDP) by rotating the site back around a pole of rotation and by using a crustal subsidence curve isostatically corrected to predict depth. The paleodepth and paleolatitude of each site, so determined, is plotted on a grid with coordinates of depth and latitude.

The sedimentation rate determined from DSDP coring records and corrected for compaction is plotted along the corresponding track on the depth-latitude grid. The carbonate percentage is similarly plotted along its track on a separate grid. Contouring these two grids shows the extent to which sedimentation in the east equatorial Pacific can be explained by attention only to depth and latitude.

The contours are complexly contorted. Error analysis suggests that the contours will not be significantly smoothed by assuming different poles or rates of rotation. Comparison of tracks suggests that re-sedimentation or erosion in preference to longitudinal changes in fertility or dissolution can explain a portion of the variation, which caused the complexity of contours. The remaining variation must be caused by temporal dependency or measurement errors.

The second part of the experiment (ESP or forward-tracking) tests for temporal dependency by working the back-tracking process in reverse, i.e. predicting thicknesses of sediment for the DSDP sites by working the process in reverse. All variation is assumed to be caused by temporal dependency, a correction is derived for this dependency, and ESP is executed. Comparison of observed thicknesses (ROPH) with predicted thicknesses (ESP) is fairly good, which shows that depth, latitude, and time are the prime variables that control sedimentation in the east equatorial Pacific.

This study suggests that only long period, high amplitude changes in sedimentation rate can be recognized by treatment of current DSDP data and that errors in measurement, although potentially trouble-some, contributed only a small amount of variation to the prediction of sediment thicknesses.

The likely magnitude of errors of measurement as they influence track elevation and latitude is given quantative expression, as is the effect of changing the pole of rotation. The effect of errors in estimate of basement age is also discussed.

INTRODUCTION

Ewing et al. (1968), using normal-incidence, seismic reflection records, demonstrated that sediment is thickest at about 4^{o} north latitude in the east-central Pacific throughout a belt that roughly paralles the equator. These sediments are composed mainly of the calcareous and siliceous remains of plankton. Today plankton production is greatest near the equator, but only a small fraction of the plankton shells pass into the sedimentary record. For the calcareous tests, which make up the bulk of the sediment, preservation is related to depth of water--the deeper the water, the more complete the dissolution of the carbonate. Destruction takes place both in the water column and on the sea floor, but mainly on the sea floor. For "normal" crust, the depth of water is itself a function of the age of the crust, water depth increasing with age as the crust is displaced from the rise crest (Sclater, Anderson, and Bell, 1971). As a further complication, the northward motion of the Pacific plate causes the rise crest to move across the zone of high productivity at the equator. Thus, sedimentation can be described as the product of two first-order factors: depth of water and proximity to the zone of high productivity (Winterer, 1973; van Andel and Heath, 1973).

The Deep Sea Drilling Project (DSDP) completed a number of holes in the thick sedimentary section of the east-central Pacific, allowing rates of deposition to be determined for the past 40 million years (Winterer, et al., 1971; Tracey, et al., 1971; Hays, et al., 1972; van Andel, et al., 1973). Employing a process he termed "backtracking", Berger (1973) traced the depth of selected DSDP sites in the equatorial

Pacific back through the past 50 million years, using subsidence data of Sclater, Anderson, and Bell (1971), who related depth of the crust to the age of the crust. To facilitate his analysis and to test for temporal changes in sedimentation patterns, Berger divided the 50 million years in 9 parts, each part represented by a grid that had as its abscissa latitude and as its ordinate depth of water. On the first grid, which covered the Quarternary, he recorded the kind of sediment that drilling records showed to have been deposited during that time, using as coordinates the present depth of water and the present latitude of the drilling site. The other grids were prepared in the same way, using the projected paleolatitude and paleodepth of the sites for the appropriate times.

The Quarternary grid showed that carbonate sediments tended to be symmetrically arranged around the equator, the CCD (carbonate compensation depth or depth of the transition from calcareous to noncalcareous sediment) being deepest at the equator and rising sharply to the north and south. All grids delineating older sedimentation patterns showed the same symmetry, but had maxima that were shifted progressively north, which is to be expected if the Pacific plate has been displaced northward across an equatorial zone of high biologic productivity. Using a rate of.23 deg/my (Winterer, 1973) to shift each plot southward, Berger (1973, Fig. 10 and 11) demonstrated that in a general way the facies patterns younger than Eocene were congruent and were centered on the equator. Berger further suggested that acomposite grid similar to his Figure 11 might be used to

predict thicknesses and kind of sediment that overlay any portion of the crust in the equatorial central Pacific for sediment younger than Eocene by working the process in reverse (forward-tracking), that is, by tracing the point back across the latitude-depth-of-water grid to determine the thickness and kind of sediment that might be encountered, were a hole to drilled.

A forward-tracking model based on composite grids has 6 assumptions as a foundation: (1) depth and latitude of deposition are the prime independent variables, (2) rates of sedimentation have been constant since the end of the Eocene (37.5 mybp), (3) erosion and resedimentation are unimportant, (4) fertility and dissolution do not vary with longitude, (5) the motion of the Pacific plate is known and has been constant since the Eocene, and (6) errors in measurement of sediment properties are insignificant.

The object of this study is the evaluation of these assumptions by performing a numerical experiment using DSDP data from the eastern equatorial Pacific. The experiment consists of four parts. In the first part we backtracked 23 DSDP sites on 2 grids with paleolatitude and paleodepth as coordinates (one grid for rate of sedimentation, one for percentage of carbonate), using a pole and rate of rotation to predict latitude and a subsidence curve (Sclater and Detrick, 1973) to predict depth. The results of backtracking were contoured, which allowed a judgement to be made concerning assumption 1 and the combined effects of assumptions 3 and 4.

In the second part, the same 23 sites were forward-tracked through the smoothed fields of the 2 grids, which, in effect, built 23

stratigraphic columns. By comparing the differences between the 23 constructed columns and the 23 observed DSDP columns, a measure of the validity of assumption 2 was obtained.

In the third part, the importance of errors in the estimate of rate and pole of rotation (assumption 5) and errors in measurement (assumption 6) are given quantative expression and the consequence of these errors, as they influence the experiment, is discussed.

In the fourth part, the thickness of sediment younger than Eocene is generated by forward-tracking for the east-central Pacific and compared with the observed thickness as determined by seismec investigations (van Andel, et al., 1975, adopted from Ewing, et al., 1968). This exercise provides a display of the over all effectiveness of the forward-tracking method.

COMPUTER MODELS

To perform the experiments, two computer models were developed. The first, ROPH, backtracks DSDP sites across 2 grids, each having latitude and depth of water as coordinates. On one grid, the rate of sedimentation adjusted for compaction is plotted in 1-million year increments, on the other, the percentages of carbonate. Appendicies I and III document the program.

The second model, ESP, forward-tracks a point across the grids generated by program ROPH to predict thickness and kind of sediment. Appendicies II and III document program ESP.

ROPH corresponds to retracing the path of the seafloor through time in order to relate the kind and quantity of deposited sediment, as observed in DSDP cores, to the prevailing latitude and depth of the sea floor; ESP is the reverse. Starting with a paleodepth and paleolongitude, the kind and quantity of sediment is predicted as a function of paleolatitude and paleodepth.

ROPH Experiment

The latitude, longitude, and water depth of a DSDP hole provides the starting data for subsequent incremental rotation of the point back through time and up the subsidence slope. At each step the new latitude and depth of water determine the coordinates of the point on two grids, both of which have 20°N to 20°S latitude as abscissa and 2300 m to 6300 m depth of water as ordinate. The rate of sedimentation, corrected for compaction, that prevailed throughout the incremental rotation, as determined from the data in the DSDP volumes, is plotted on one grid, the percentage of carbonate on the other. In the DSDP volumes sediment with a carbonate percentage greater than 75 percent usually will be described as carbonate, 75 to 30 percent as alternating beds of calcareous and siliceous ooze, and less than 30 percent as either clay or siliceous ooze; thus, the percentages have a qualitative significance with respect to sedimentary facies.

Age-thickness curves, either published in DSDP volumes or constructed from the data of DSDP volumes, provide the raw material for determination of sedimentation rates. Table I lists DSDP holes used in this model. In increments of 1 million years, the thickness of

Site (DSDP No.)	Latitude (degrees)	Longitude (degrees)	Depth (Corrected meters)	Sediment (m)	Basement (m.y.b.p.)
65	4.35N	176.99W	6130	400	130.0
66	2.39N	166.12W	5293	193	95.0
68	16.72N	104.17W	5467	370	100.0
69	6.00N	152.86W	4978	360	87.0
70	6.34N	140.36W	5059	400	60.0
71	4.47N	140.31W	4419	587	60.0
72	0.44N	138.87W	4326	368	57.0
73	1.91S	137.47W	4387	317	54.0
74	6.23S	136.08W	4431	103	50.0
75	12.51S	134.67W	4181	82	37.5
77	0.48N	133.23W	4291	483	41.0
78	7.95N	127.36W	4363	321	35.0
79	2.55N	121.57W	4566	413	24.1
80	0.96S	121.55W	4399	199	22.5
82	2.59N	106.94W	3689	223	7.0
159	12.33N	122.29W	4484	108	24.0
160	11.72N	130.88W	4940	114	34.8
161	10.24N	139.95W	4939	245	46.0
162	14.88N	144.04W	4854	153	53.0
163	11.25N	150.29W	5230	284	76.0
164	13.20N	161.66W	5485	274	115.0
166	3.76N	175.08W	4950	310	120.0
168	10.66N	173.55W	5420	246	110.0

Table I. Deep Sea Drilling Project Sites

Latitudes, longitudes, depth of water, sediment thickness overlying the basement, and basement age of drilling sites used for construction of latitude-depth-of-water grids.

sediment that is younger than the incremented age is entered in the model along with the average $CaCO_3$ content and density of each interval. Where coring is not continuous, interpolation is used to determine missing values. Specifying the latitude, longitude, depth of water, age of crust, thickness of sediment cover, rate of rotation, and pole of rotation readies the first part of the model for execution.

Points are rotated in 1-million year increments counterclockwise around the pole, using standard formulas of spherical trigonometry to obtain new positions. The new latitude provides the first coordinate of the point relative to the latitude -depth-of-water grids. The second coordinate, depth of water, is determined by reference to the Pacific subsidence curve of Sclater and Detrick (1973). At each iteration the point represents a younger stage of plate evolution. Accumulated sediment is thinner than before, and the crust is younger. The subsidence curve predicts the depth to the crust, stripped of sediment; the DSDP hole provides an estimate of depth of crust, overlain by sediment.

The difference between the depth predicted by the Sclater-Detrick subsidence curve and the depth observed at the DSDP site, sediment cover removed and the crust isostatically adjusted, is held constant. At each iteration, the new depth, according to the subsidence curve, plus this correction, gives the depth to the crust. An isostatic correction using the reduced thickness of sediment gives the new depth of water. Thickness of sediment is determined by subtracting the amount removed for all previous iterations form the original thickness

of sediment. The density of sediment for each interval used in the calculation is the value recorded in the DSDP volume. The result is a series of subsidence curves, each corresponding to the track of a drill site (Fig. 1).

At this stage, the coordinates of the grids have been specified, and the rate of sedimentation remains to be calculated. The rate is determined by calculating the thickness that was removed during the 1-million year rotation, and dividing the thickness by the duration of the interval, in this model 1-million years. Bacause compaction increases with depth of burial, rates determined at different depths in the sedimentary column are not readily comparable and must be adjusted to some standard of compaction. The standard value chosen is arbitrary; here, all thicknesses are adjusted to a porosity of 76 percent (Hamilton, 1959; Schlanger et al., 1973), using bulk density of the sediment as given in the DSDP volumes and adopting as grain density the value 2.60 gm/cm^3. The adjusted thickness is plotted on one grid, the percentage of carbonate on the other. The pole and rate of rotation (72°N, 83°W at 0.81 deg/my) is approximately that of Jarrad (1975). For isostatic corrections, the crust is assumed have a density of 3.3. Equations and a detailed description of the method is contained in Appendix I and III.

ESP Experiment

Model ESP predicts the stratigraphic section at a point on the Pacific plate in the east-central Pacific, given the latitude, longitude and depth of water, rate and pole of rotation (same as ROPH),

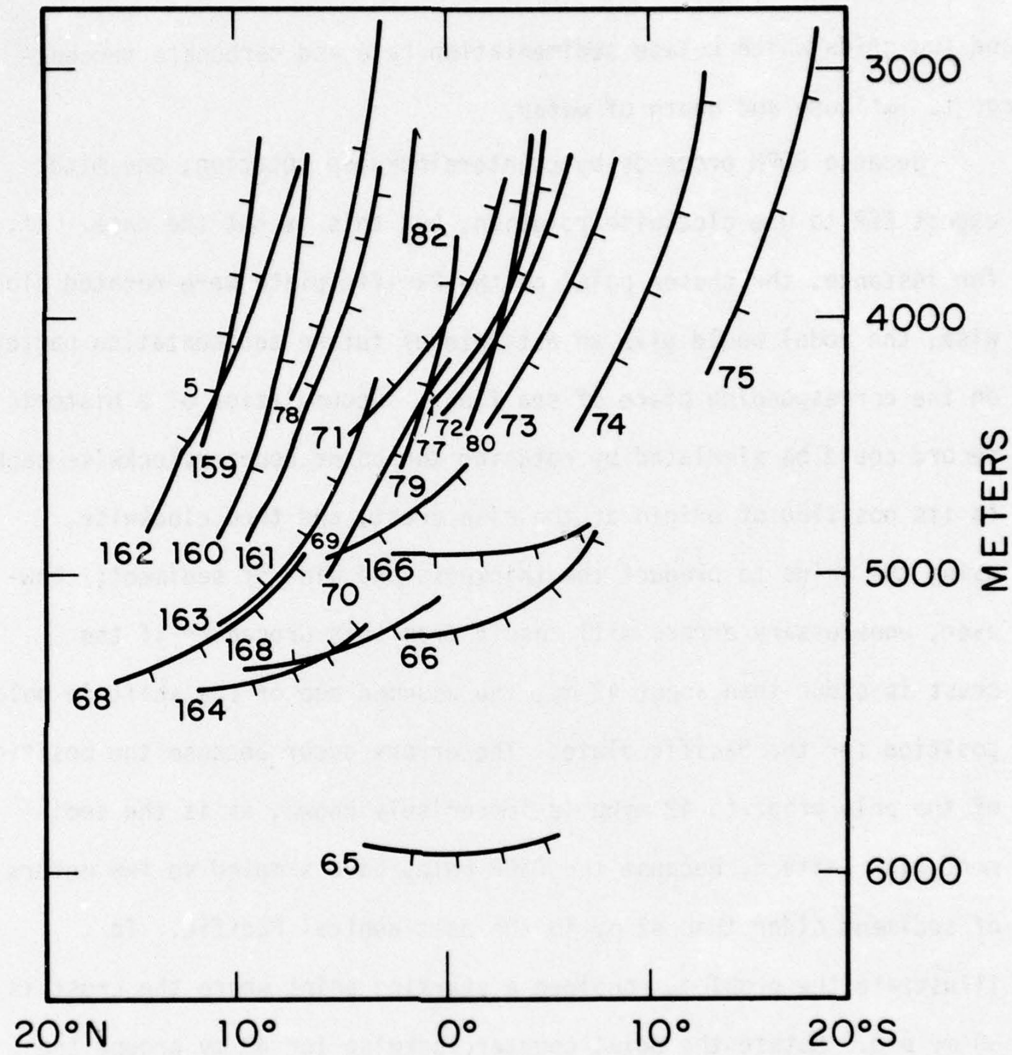

Figure 1. Latitude-depth of-water grid. Traces of DSDP holes are shown for past 42 million years, with depth of water and latitude as coordinates. Tick marks appear at 10 my intervals; DSDP site number appears at lower end of each trace; pole of rotation is $72^{o}N$, $83^{o}W$ at 0.8 deg/my.

and two grids which relate sedimentation rate and carbonate percentage to latitude and depth of water.

Because ROPH proceeds by counterclockwise rotation, one might expect ESP to use clockwise rotation, but this is not the case. If, for instance, the chosen point on the Pacific plate were rotated clockwise, the model would give an estimate of future sedimentation patterns on the corresponding piece of sea floor. Accumulation of a historic record could be simulated by rotating the point counterclockwise back to its position of origin at the rise crest, and then clockwise, using the grids to preduct the thickness and kind of sediment; however, unnecessary errors will result from this procedure if the crust is older than about 42 my, the assumed age of the shift in pole position for the Pacific plate. The errors occur because the position of the pole prior to 42 mybp is imprecisely known, as is the sedimentation pattern, because the DSDP holes have sampled so few meters of sediment older than 42 my in the east-central Pacific. To illustrate the problem, consider a starting point where the crust is 80 my old. Rotate the point counterclockwise for 42 my around the Hawaiian pole, then 38 my around the Emperor pole to the rise crest. Because the position of the Emperor pole is imprecisely known, an error in latitude results. Now rotate the point clockwise around the pole and enter the grids to predict the thickness of sediment laid down. This will produce an error in the estimate of depth of water because sedimentation pattern is not known for the first 38 million

years of rotation.

The solution employed here uses incremental counterclockwise rotation to trace the path of the point back through time. At the end of each increment of rotation, the grids are entered at the predicted latitude and depth of water, and the lithology and thickness for that increment is determined. The new depth of water is calculated by determining the isostatic rebound caused by the removal of the predicted thickness of sediment. Conceptually, this amounts to rotating the point counterclockwise, stripping off a layer of sediment, and determining how much and of what kind has been removed.

The thicknesses predicted by the grid has a porosity of 76 percent and must, as a consequence, be corrected to reflect compaction. The correction for compaction used here is emperical, being derived from the curve which shows the relationship between the DSDP thickness and the DSDP thickness corrected to 76 percent porosity (Fig. 2.4). The derivation of the relationship is discussed at Step 15 of Appendix II.

RESULTS OF ROPH

The backtracked tracings for the 23 holes drilled in the east equatorial Pacific (Table I) are illustrated in Figure 1, and the contoured patterns of sedimentation rate and carbonate are shown in Figures 2 and 3. Figures 4, 5 and 7 show some of the DSDP site-tracks with the accompanying rates of sedimentation plotted along the tracks. Figure 6 shows some of the carbonate tracing.

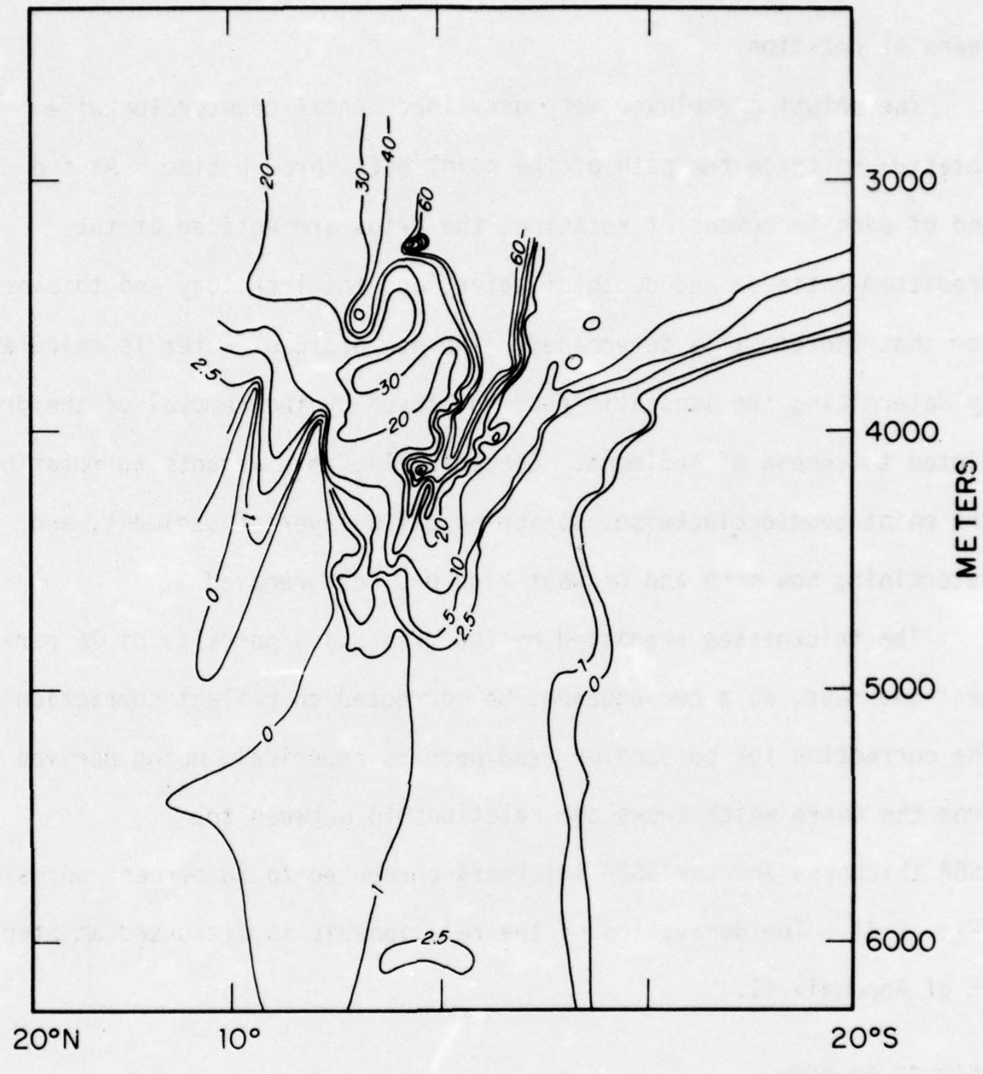

Figure 2. Contours of rate of sedimentation. Contours are drawn on rates of sedimentation for past 30 my plotted along the trace of each site, Figure 1. Contours are in meters/ million years, rates corrected to porostiy of 76 percent.

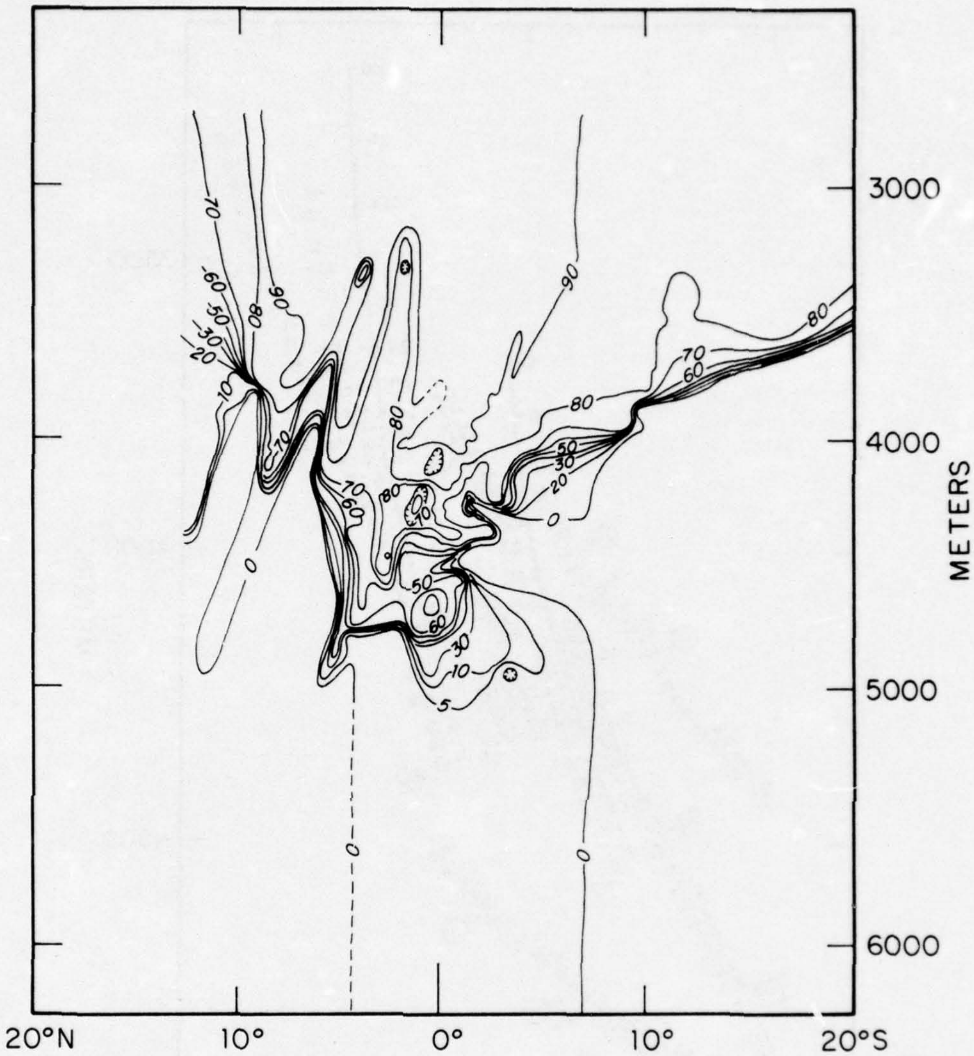

Figure 3. Contour of percent carbonate. Contours are drawn on percent carbonate for past 30 my plotted along the trace of each site, Figure 2.

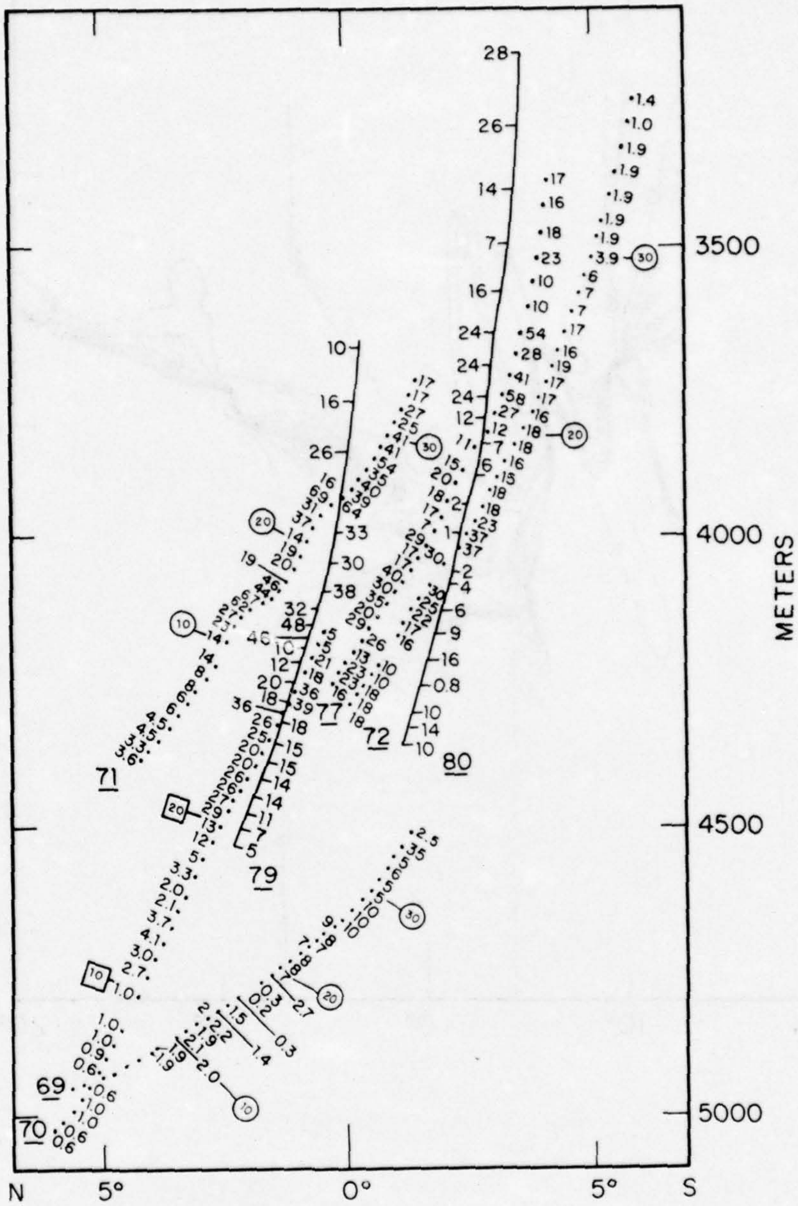

Figure 4. Traces of Sites 69, 70, 71, 72, 77, 79, and 80 showing corrected rate of deposition. This figure is an enlargement of a portion of Figure 1, showing rates of sedimentation adjusted to a porosity of 76 percent. Rates greater than 5 m/my are rounded to the nearest meter. Circled and boxed numbers are ages in millions of years before present.

In an ideal world, where the stated assumptions are valid, countouring of the backtracked data will produce isopleths that are smooth, regular, and show downward deflection at the equator, where rate of sedimentation is greatest. In a crude way, the contours based on DSDP data (Figures 2 and 3) approach the ideal, being deflected at the equator, but complexities abound. Where tracks cross, values of sedimentation rate commonly do not agree, the rates of some neighboring tracks do not match, and some isolated tracks can be accommodated only by broad warpings of the contours. The discrepancies could be caused by scaling or measuring errors of original data, incorrect selection of pole and rate of rotation, errors in basement age, errors in the subsidence curve, temporal variations of sedimentation rate, longitudinal separation of points, random error, or local variation in rates of sedimentation. The results presented here allow some of these factors to be evaluated.

Sites 73, 74, and 75

In the portion of Figure 1 where relationships are least ambiguous, Sites 73, 74, and 75 allow smooth contouring and fulfill the prophesy of an ideal world, which leads to speculation that perhaps south of 6^0 latitude and above 4000 m, sedimentation on the Pacific plate may behave with probity.

Sites 69 and 70

At the crossing of their traces, Sites 70 (Figures 1 and 4) shows sedimentation rates that are less than 1 m/my and Site 69 shows rates

that are zero. The age of crossing at Site 69 is 2 mybp, the age at Site 70 is 5 mybp. The crossing must be considered only fair, in spite of the small difference in rates, because the time of crossing is nearly the same at both sites, and because Site 70 clearly received sediment, while 69 did not; no manipulation of reasonable error, as discussed in Appendix IV, for any of the modeled variable will explain the difference. The longitude might be a factor, because approximately 12 degrees separates the two sites, but local variation in sedimentation rates could answer just as well. Both holes are drilled in depressions on the sea floor, but of the two, the depression at Site 70 is the more pronounced. Within 2 miles of Site 69, the uppermost layer is eroded (Tracey and Sutton, et al., 1971, p. 62). At Site 70 all layers thicken near the center of the depression, with the lowermost layers showing the greatest increase throughout its history, which suggests that Site 70 has been the receptor of redeposited sediment (Tracey and Sutton, et al., 1971, p. 163). A superabundance of sediment at Site 70 can, and probably does, explain the difference between the rates of the two sites.

Sites 72, 77, and 80

The tracing of Site crosses those of 72 and 77 (Figures 1 and 4). Throughout much of its length, rates for Site 80 are one-half to one-fifth those of 72 and 77. The latitude and longitude of Sites 72 and 77 differ by less than 5 degrees (Table I), and so both will trace similar paths across the grid, regardless of the poles or rate used. Any pole or rate of rotation that shifts the tracing of 80 relative

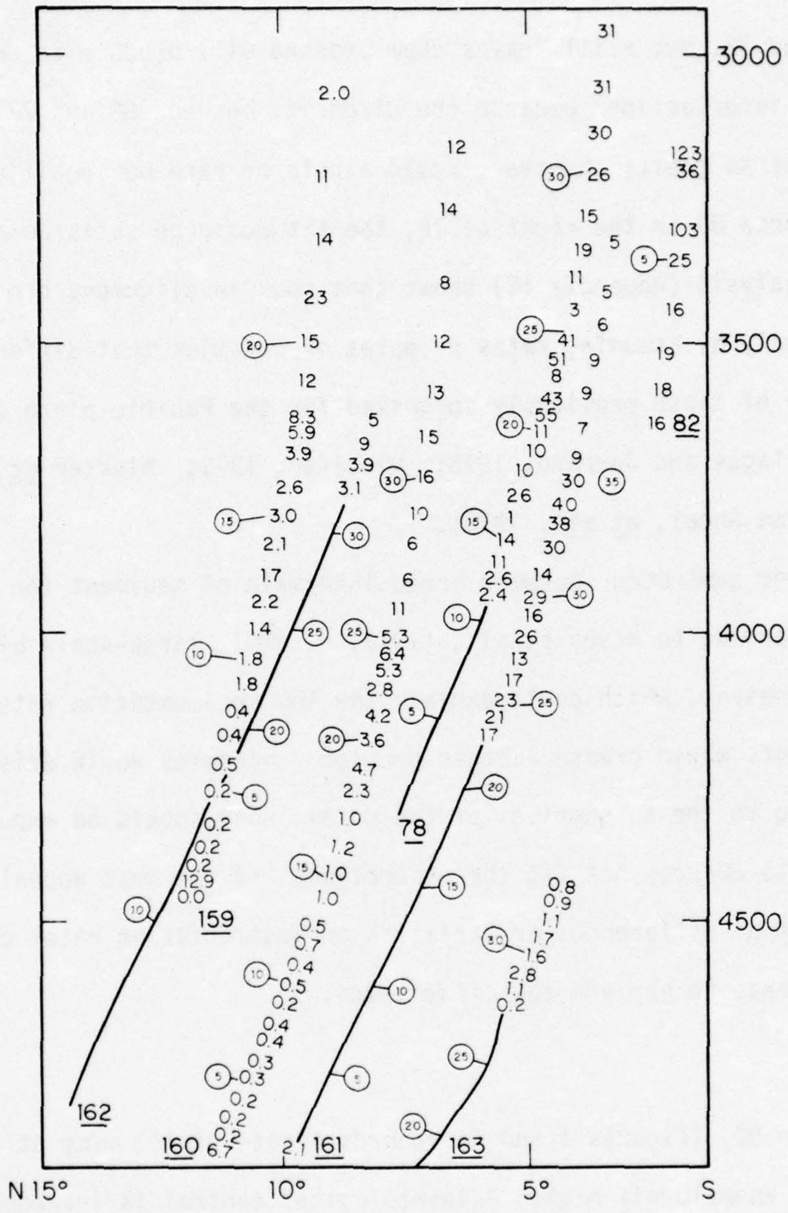

Figure 5. Trace of Sites 78, 82, 159, 160, 161, 163 showing corrected rates of deposition. This figure is an enlargement of a portion of Figure 1, showing rates of sedimentation adjusted to a porosity of 76 percent. Rates greater than 5 m/my are rounded to nearest meter. Circled numbers are in millions of years before present. Solid lines mark times of no sedimentation.

to 77 and 72, but still leaves them crossed will produce an unsatisfactory intersection because the disparity between 80 and 77 and 80 and 72 is so great; however, could a pole or rate be specified that would throw 80 to the right of 72, the fit would be satisfactary. Error analysis (Appendix IV) shows that such an alignment can be caused only by assuming rates or poles of rotation that differ greatly from any of those previously suggested for the Pacific plate (Morgan, 1972; Clague and Jarrard, 1973; Winterer, 1973; Minster et al., 1974; van Andel, et al., 1975).

Large gaps occur between cored intervals of sediment for Site 80. According to Hayes et al., (1972, p. 410), large-scale hiatuses may be present, which could explain the low sedimentation rates, but, if present, would create another problem: hiatuses would exist where, according to the assumptions of the model, none should be expected. Thus, Site 80 does not fit the assumptions and one must appeal to longitudinal differences or variation in sedimentation rates caused by local agents to explain the differences.

Site 82

Site 82, (Figures 1 and 5) records a rate of 103 m/my at 6 m.y.b.p., which is anomalously high. Paleontological control is inadequate for this hole and this can explain the high value; however, the average percent of carbonate is only 73 at 2 m.y.b.p., 77 at 4 m.y.b.p., and 70 at 6 m.y.b.p., which is low compared to the percentages for the nearby tracing of Site 78 and 161 at ages younger than 30 m.y.b.p. (Figure 6). For this reason, Site 82 must be judged a poor fit within

the grid.

Sites 159 and 162

At the crossing of Sites 159 and 162 (Figure 5), Site 159 is 7 m.y. old and shows a sedimentation rate less than 1 m/my. Site 162 is about 16 my old and shows a hiatus from the present to 31 m.y.b.p. The crossing is unacceptable in an ideal framework, causing a long deflection of contours in Figure 2. Here no change in pole, rate of rotation, subsidence curve, or age of basement can explain the discrepancy because the magnitude of error and its persistence through time is too great. Longitude between the two sites differs by some 22^{o}, which might explain the difference, but so might local variations in sedimentation rate.

Both Site 159 and 162 were drilled through a thin sedimentary layer that overlies a depression in the basement.

Sites 160 and 162

These two sites plot as adjacent, nearly parallel traces throughout much of their length (Figure 5). Site 160 received sediment at rates less than 1 m/my from 0 to 15 m.y.b.p. and then increasing to 10 m/my from 15 to 29 m.y.b.p. Site 162 received no sediment throughout the last 31 my. Thus, as with Sites 162 and 159, only longitude or local variation can explain the difference, which is unarguably a significant one.

Sites 78 and 160

Site 78 plots close and nearly parallel to Site 160 (Figure 5). Site 160 received sediment throughout the past 36 million years; Site

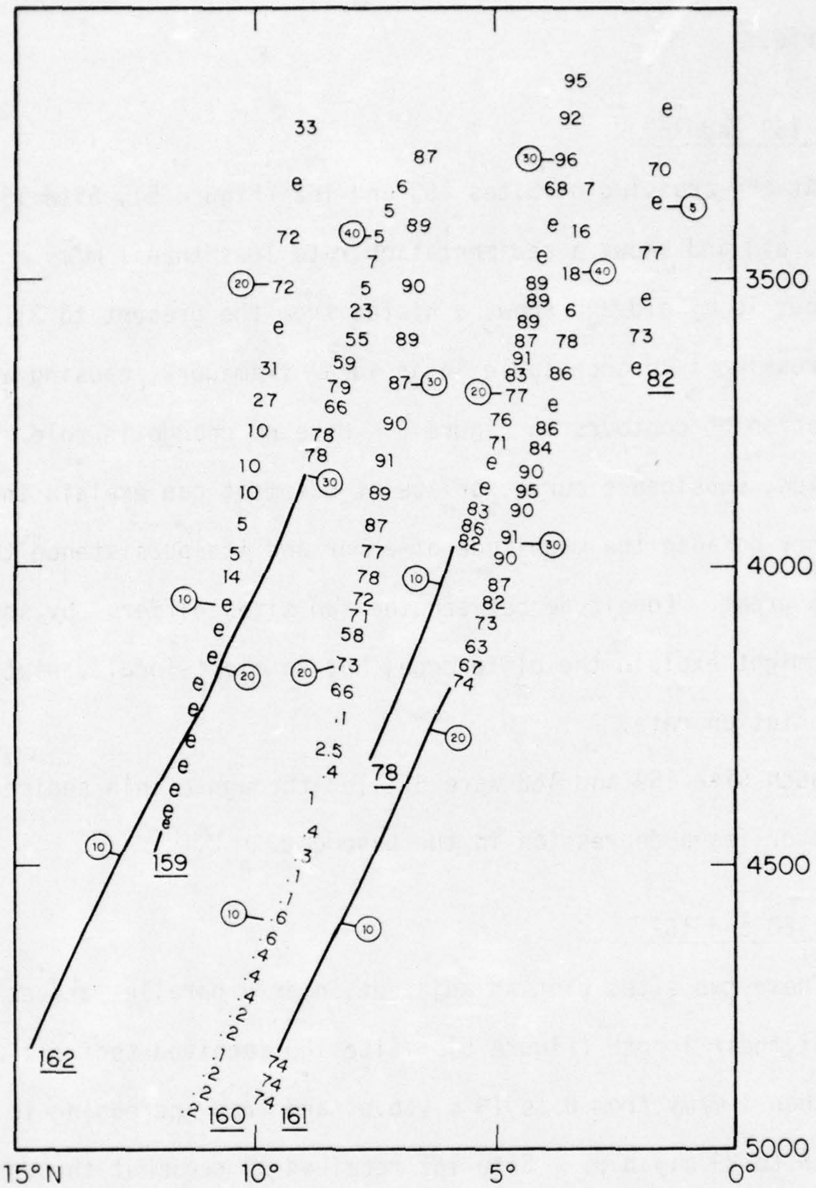

Figure 6. Traces of Sites 78, 82, 159, 160, 161 and 162 showing percent of carbonate. This figure is an enlargement of a portion of Figure 1, showing the percent of carbonate. Straight line segments represent hiatuses, the letter "e" a time interval for which no estimate of carbonate is available. Circled numbers are ages in millions of years before present.

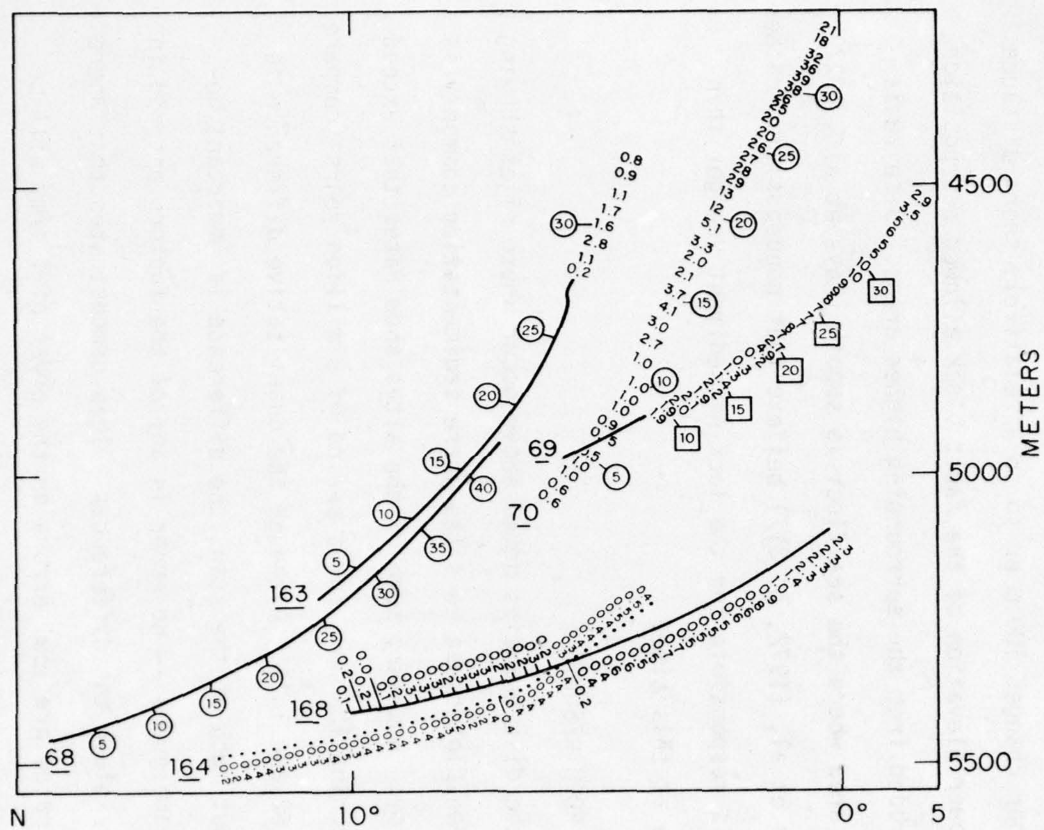

Figure 7. Traces of Sites 68, 69, 70, 163, 164, and 168, showing corrected rates of sedimentation adjusted to 76 percent porosity. Rates greater than 5 m/my are rounded to the nearest meter. Straight line segments without accompanying rates of sedimentation represent hiatuses; circled and boxed numbers are ages in millions of years before present.

78 did so only at times older than 11 m.y.b.p. Site 78 has an anomalously high sedimentation rate for ages older than 30 m.y.b.p. At these ages, all other holes show a decrease in rate of sedimentation. Site 160 is located on a down-faulted block in an area where the relief of the sea floor changes 100 m or so in a relatively short distance. Perhaps the lower elevation of the fault block allowed redeposition of sediment eroded from the surrounding higher areas. Site 78 is located in an area where the sea floor is smooth (Hays et al., 1972 p. 211). Hays et al. (1972, p. 217) believe that nondeposition rather than erosion is responsible for the lack of sediment younger than Middle Miocene at this site.

DISCUSSION OF ROPH RESULTS

Many of the discrepancies noted above occur where sites showing no sedimentation plot close to sites where sedimentation commonly is less than 1 m/my; however, some of the sites show rates that exceed 1 m/my, approaching 10 m/my, for a period of 8 million years (compare 160 with 78, 162 and 161). Although the quantitative difference is small throughout much of the span, the difference is important because it is unambiguous -- no error in any of the factors entered in the model can explain the differences. This demonstrates that where sedimentation rates are low, errors on the order of 1 m/my will be common, and a question arises concerning sites where sedimentation rate is high. Should discrepancies be expected to stay near 1 m/my, or might not the error be proportional to the rate of sedimentation -- the higher the rate, the more sediment deposited, and, therefore,

the greater the potential for error?

Site 80 compared with 77 and 72 suggests that greater error might be expected to accompany increased rate of sedimentation. Of all the sites plotted, only 73, 74, and 75 behave as predicted by the generalized model. Where analysis of error can be made only longitude or local variation in sedimentation rates can conceivably explain the differences. In no place can the effect of longitude be discounted; however in many places the data indicates that local variation in sedimentation rate, probably the result of resedimentation, is important.

Most recently, Berger and Johnson (1975) have documented slumping and perhaps creep on slopes dipping at low angles. Seismic reflection profiles commonly show that sediment is thick in depressions and thin on elevations (Shor, 1956). Most of the DSDP sites considered here are drilled in depressions; thus, it is not surprising that this generalized model of sedimentation, which ignores local variation in sedimentation rates, is imperfect.

ESP RESULTS AND DISCUSSION

After contouring of the sedimentation rates (Fig. 8) and the percentage of carbonate (Fig. 9) had been completed for the backtracking data, the results were translated to two 40 x 40 arrays, which were used by the computer for forward tracking (ESP), taking as starting points the latitude, longitude, and depth of water of the 23 DSDP sites (Table I). Several executions of ESP were made; after each execution, the arrays were altered to reduce the differences between the observed and predicted values, always maintaining symmetry

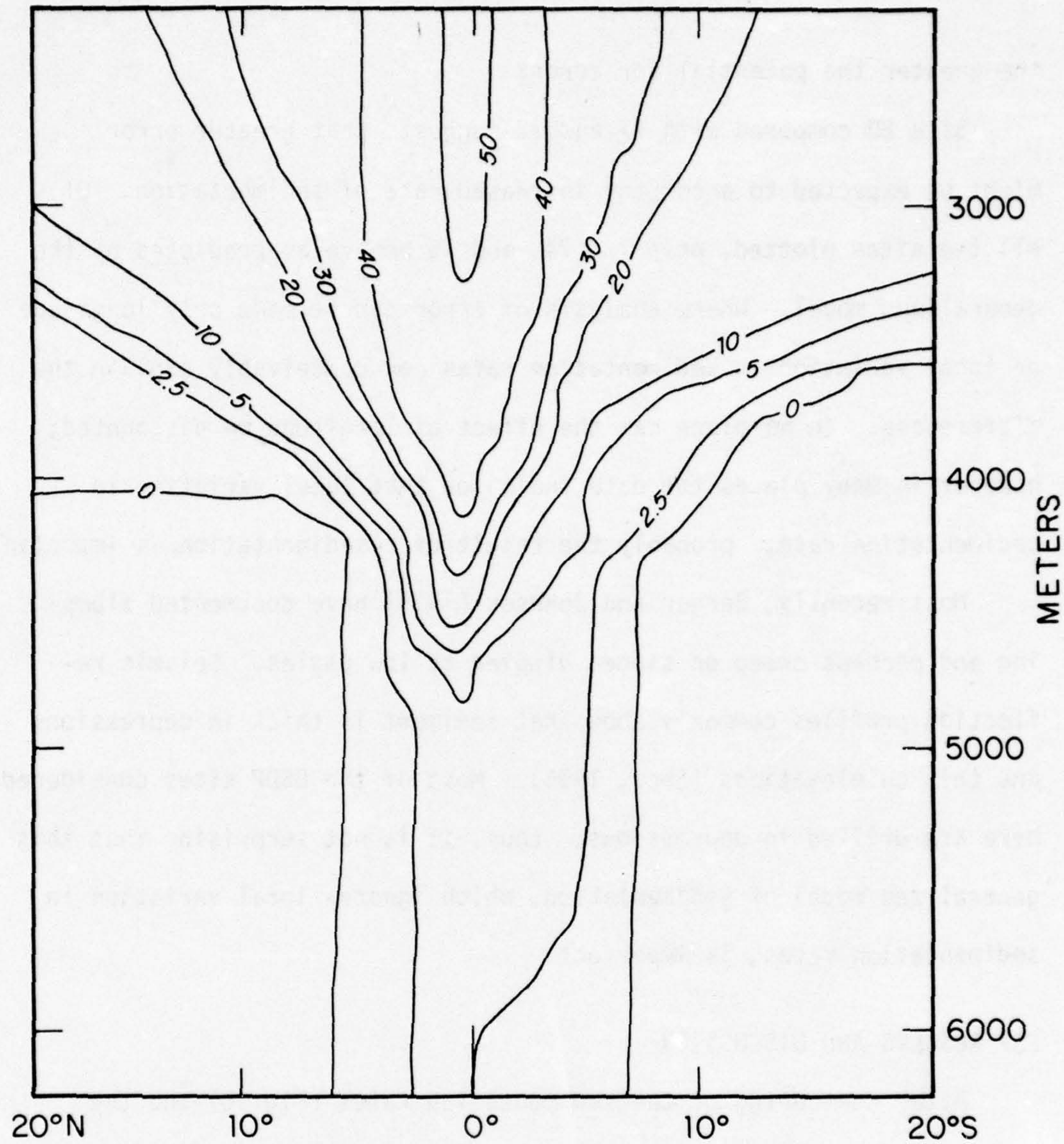

Figure 8. Smoothed contours of rate of sedimentation. This figure was prepared by smoothing the contours of Figure 2. Rates are in m/my, depths in meters.

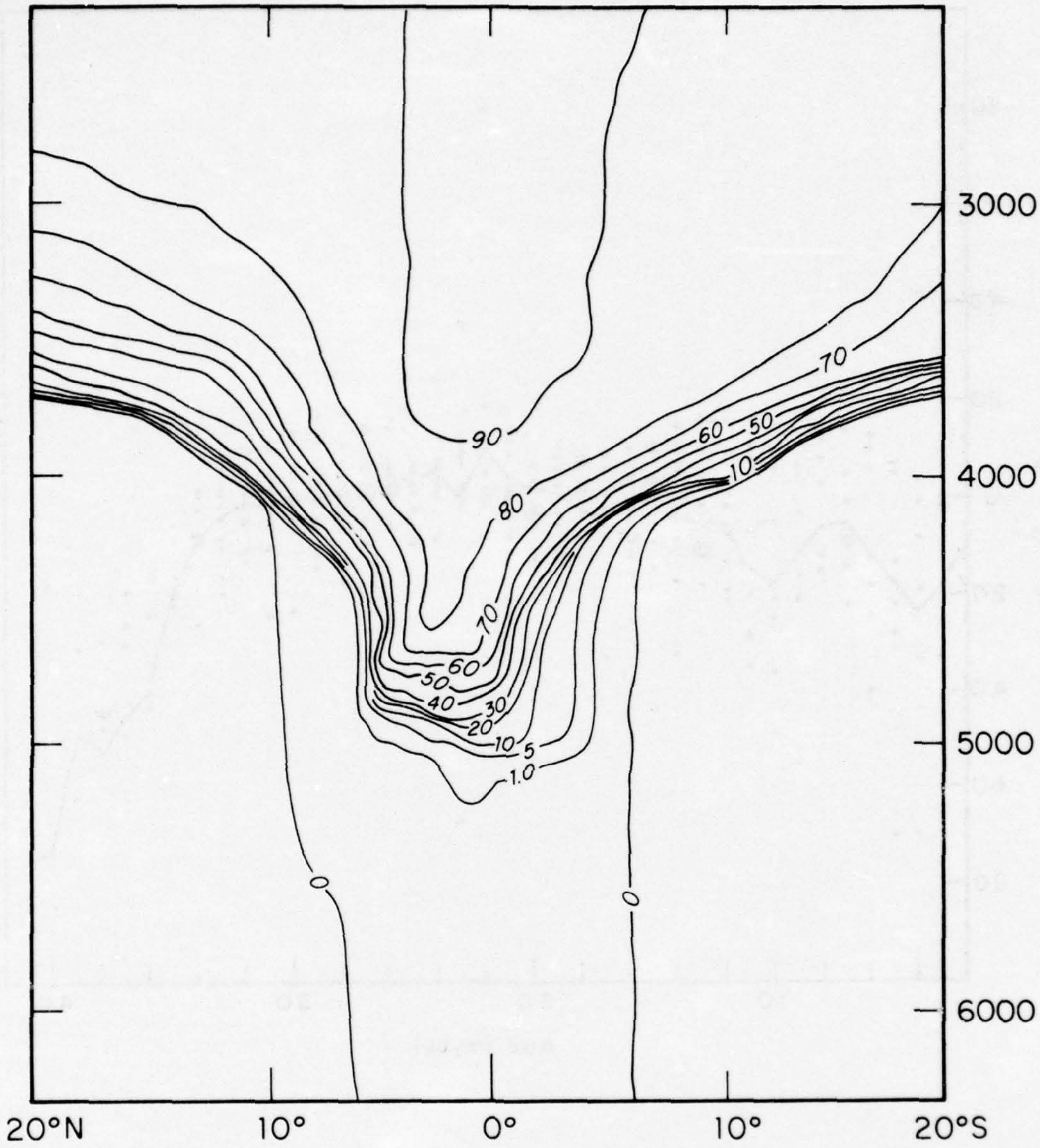

Figure 9. Smoothed contours of percent carbonate. This figure was prepared by smoothing the contours of Figure 3.

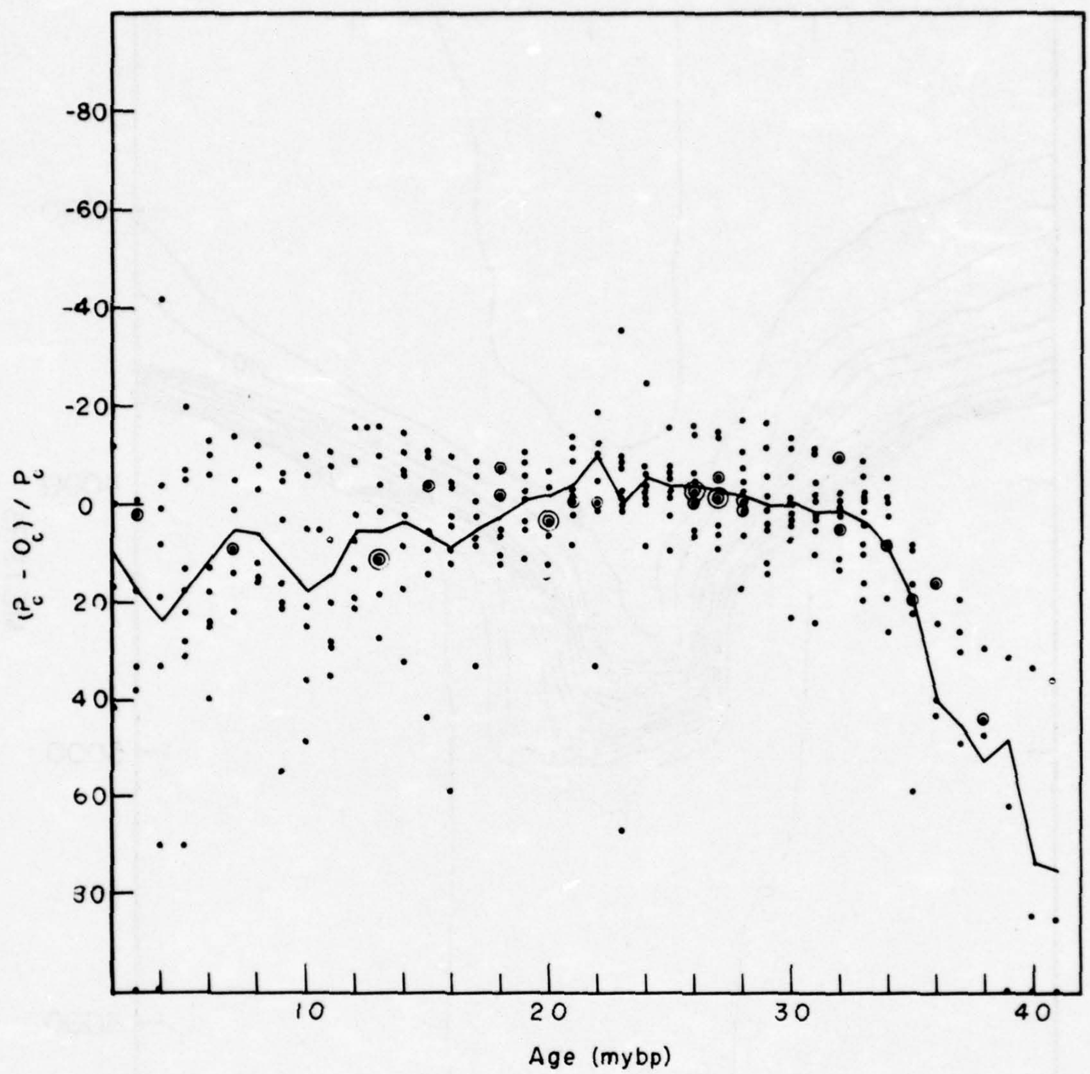

Figure 10. Carbonate variation with time. The ordinate is the quantity $(P_C - O_C)/P_C$ where P_C is the predicted percent of carbonate (ESP) for a DSDP site and O_C is the observed percent (ROPH). The abscissa is in millions of years before present. The curve is constructed by connecting the mean of each interval.

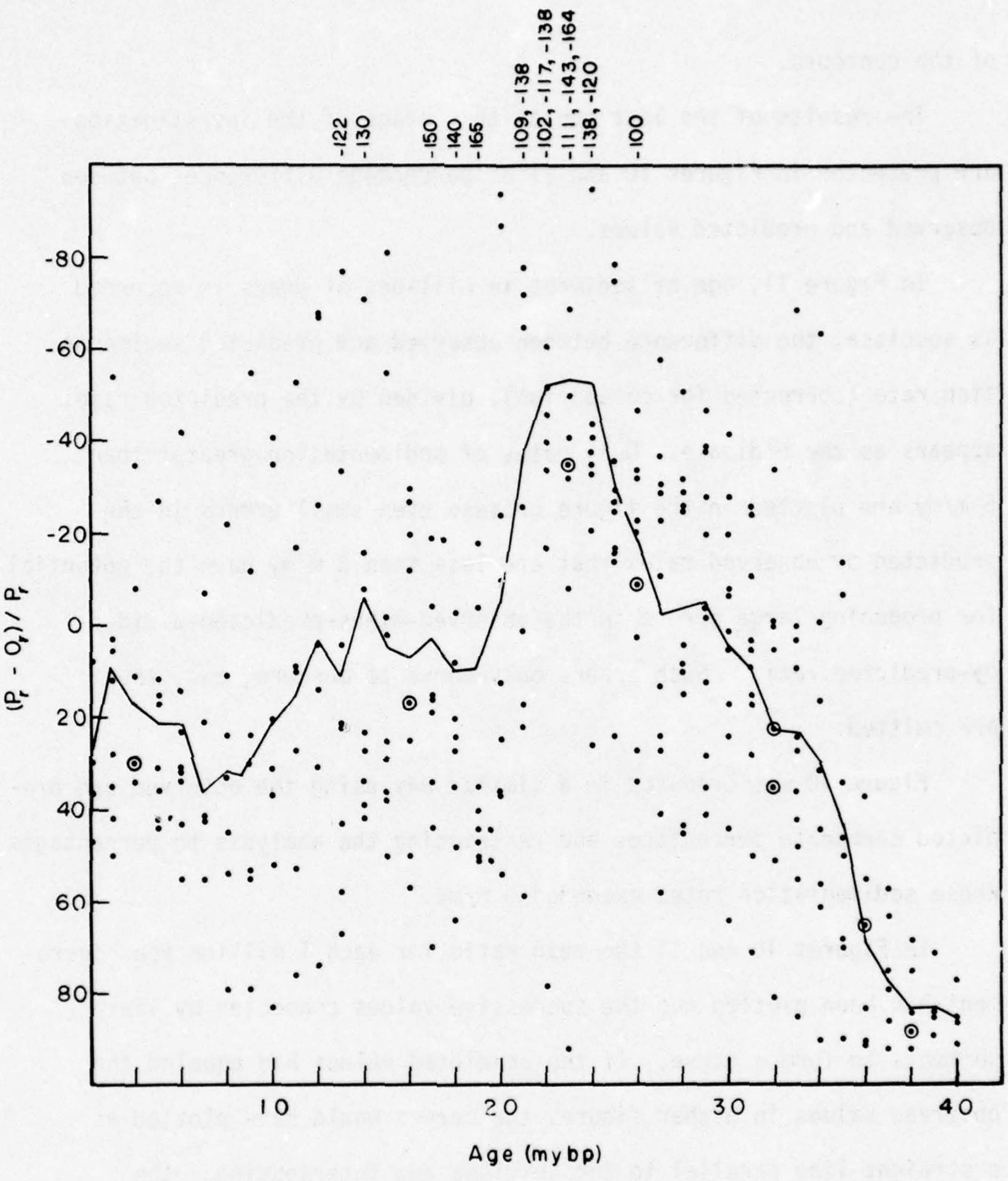

Figure 11. Rate of sedimentation variation with time. The ordinate is the quantity $(P_r - O_r)/P_r$ where P_r is the predicted rate of sedimentation (ESP) for a DSDP site and O_r is the observed rate (ROPH). Both rates are corrected to 76% porosity. The abscissa is in millions of years before present. The curve is constructed by connecting the means of each interval.

of the contours.

The results of the last run at this stage of the investigation are presented in Figures 10 and 11 as percentage differences between observed and predicted values.

In Figure 11, age of sediment in millions of years is recorded as abscissa, the difference between observed and predicted sedimentation rate (corrected for compaction), divided by the predicted rate, appears as the ordinate. Only rates of sedimentation greater than 5 m/my are plotted in the figure because even small errors in the predicted or observed rates that are less than 5 m/my have the potential for producing large errors in the observed-minus-predicted-divided-by-predicted ratio. Such errors only serve to obscure, and, thus, are omitted.

Figure 10 was produced in a similar way using the observed and predicted carbonate percentages and restricting the analysis to percentages whose sedimentation rates exceeded 5 m/my.

In Figures 10 and 11 the mean ratio for each 1 million year increment has been plotted and the successive values connected by line segments to form a curve. If the predicted values had equaled the observed values in either figure, the curves would have plotted as a straight line parallel to the abscissa and intersecting the ordinate at zero. The distance from zero graphically shows the failure of ESP to reproduce the data observed from the DSDP cores.

These results clearly show that depth of water and distance from the equator cannot, of themselves, explain the sedimentation rates and carbonate percentages observed at the 23 DSDP sites, which is

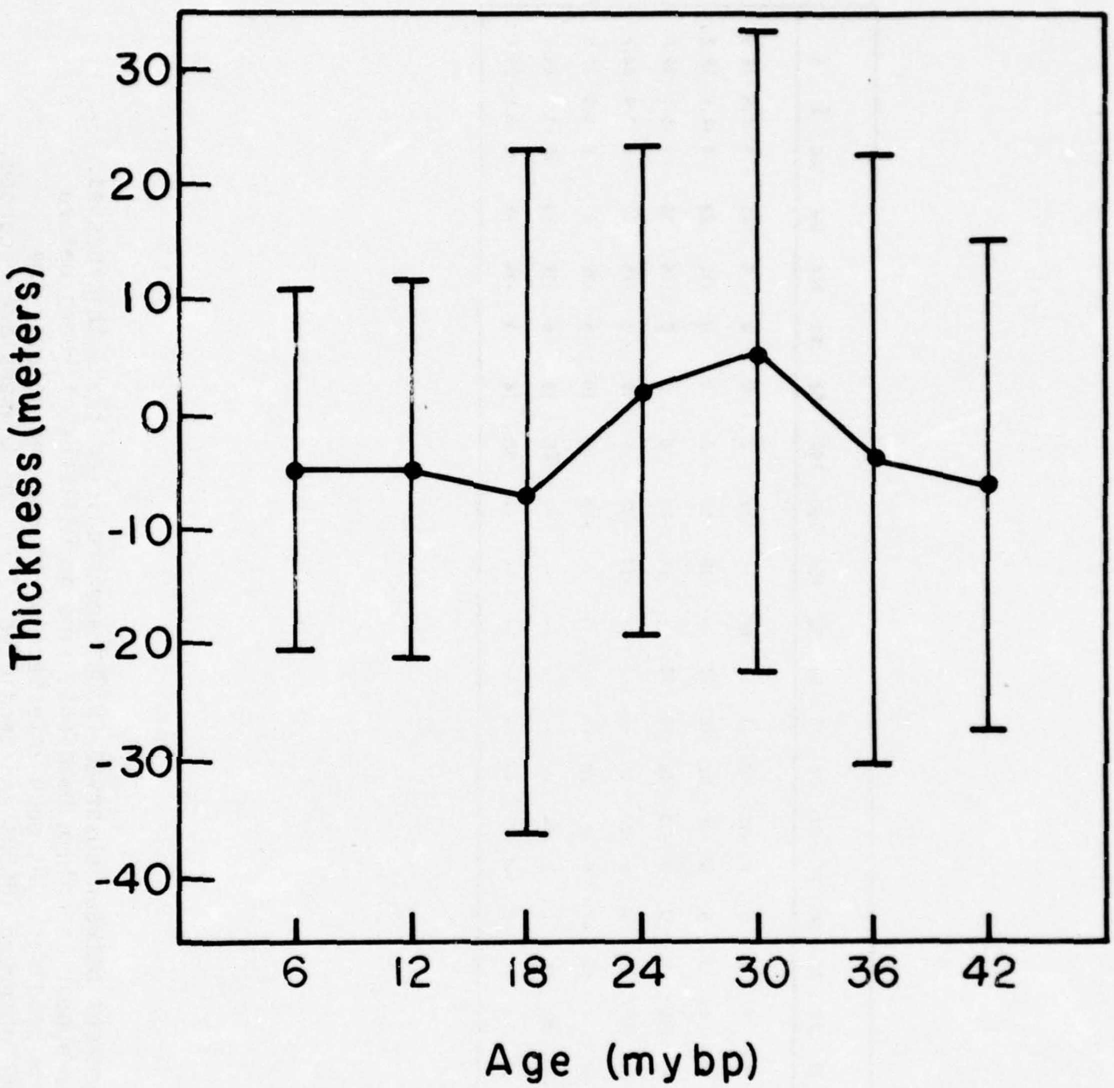

Figure 12. Mean and standard deviation of the differences between predicted thickness (ESP corrected for compaction) and observed thickness (ROPH compacted) for all sites at 6 million year intervals. The heavy line connects the mean value of each interval. The vertical bars mark off 1 standard deviation above and below the mean.

Age \ Site	65	66	68	69	70	71	72	73	74	75	77	78	78	80	82	159	160	161	162	163	164	166	168	$\bar{X}$	S
6	-18	1	- 2	11	- 5	12	18	2	5	0	-17	0	-31	-13	-57	-11	-11	- 2	0	0	- 6	15	- 3	-4.8	15.9
12	-18	-4	- 8	14	- 3	16	- 4	3	5	0	-38	22	-36	27	--	-18	-13	- 2	0	0	-12	23	- 8	-4.9	16.2
18	- 3	-7	-12	33	9	-40	-36	1	0	3	-33	46	-92	28	--	-18	-23	- 2	0	0	-19	36	-11	-6.3	29.6
24	0	-5	- 5	46	3	15	-18	3	4	3	-23	42	--	--	--	-13	-32	- 5	4	2	-25	52	- 5	3.4	22.2
30	23	-5	6	44	-26	-17	- 4	10	-1	6	-29	78	--	--	--	--	-12	-12	20	5	-32	48	6	5.6	27.9
36	18	-1	15	26	-44	-19	22	-14	1	7	-54	--	--	--	--	--	--	-46	16	6	-34	23	15	-3.7	26.5
42	5	-7	6	8	--	-16	--	--	7	--	--	--	--	--	--	--	--	-58	14	3	-35	-5	6	-6.0	21.1

Table II. Differences between observed (DSDP) and predicted (ESP) thicknesses. DSDP site numbers appear as column headings, time in millions of years before the present as row headings. At each intersection of row and column, the difference between observed (DSDP) and predicted (ESP) thicknesses are recorded. Two dashes indicate that the DSDP site did not penetrate sediment of row age. The row mean ($\bar{X}$) and standard deviation (S) appear in the last two columns.

not surprising, because Heath (1969), Berger (1973), and van Andel and Moore (1974) have suggested that the carbonate compensation depth in the Pacific has temporal dependency.

In the succeeding experiment, all of the variation shown in Figures 10 and 11 was assumed to be caused by temporal changes and the predictions of thickness for the 23 DSDP sites were made again after applying a correction: The ratios traced out by the curves (Figs. 10 and 11) are applied directly to the predicted rates and carbonate percentages. For instance Figure 11 shows that at 23 mybp the sedimentation rate was 54 percent higher than the mean rate; thus, rates for all sites of this age will be increased 54 percent.

The result of this experiment is summarized in Figure 12 and Table II, where comparisons of total accumulated thicknesses (DSDP-observed minus ESP-predicted) is made at 6 million year intervals. Figure 12 records the mean and the standard deviation of the differences. The mean difference is generally less than 6 m and the standard deviation less than 29 m. Had all the data been included in the construction of Figures 10 and 11, the subsequent corrections to the rates would have produced a mean difference close to zero with an increased standard deviation.

A fuller appreciation of the effectiveness of the model may be realized by comparing the thickness of sediment in the east-central Pacific determined from DSDP drilling records and seismic reflection profiles with the thickness predicted by the model.

Because the DSDP results suggest that the rate of sedimentation decreased drastically for times older than Oligocene but younger than U.

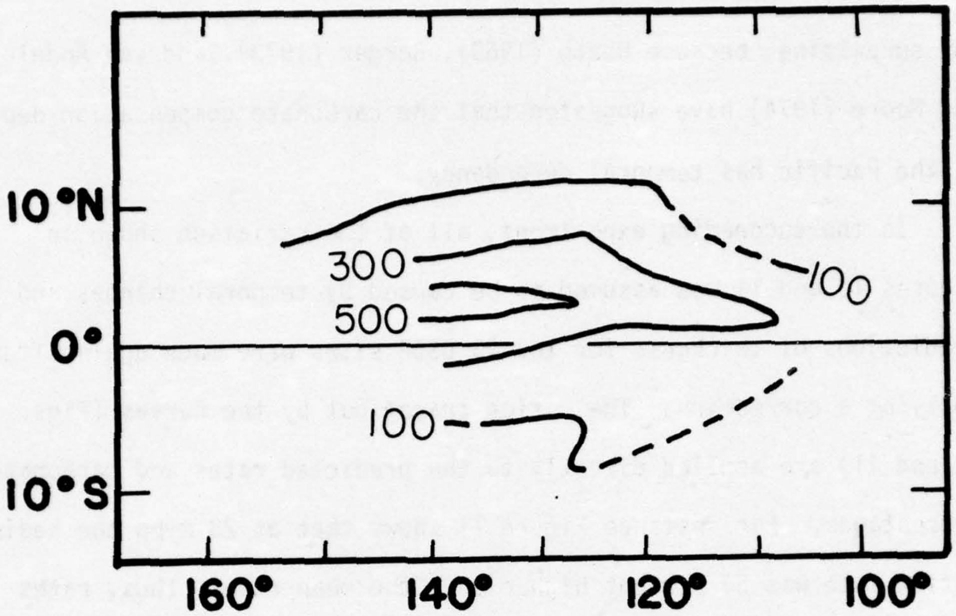

Figure 13. Contoured thickness of sediment in the east central Pacific younger than 36 my determined from Deep Sea Drilling Program records. Contours are in meters; data from 23 holes, Table 1.

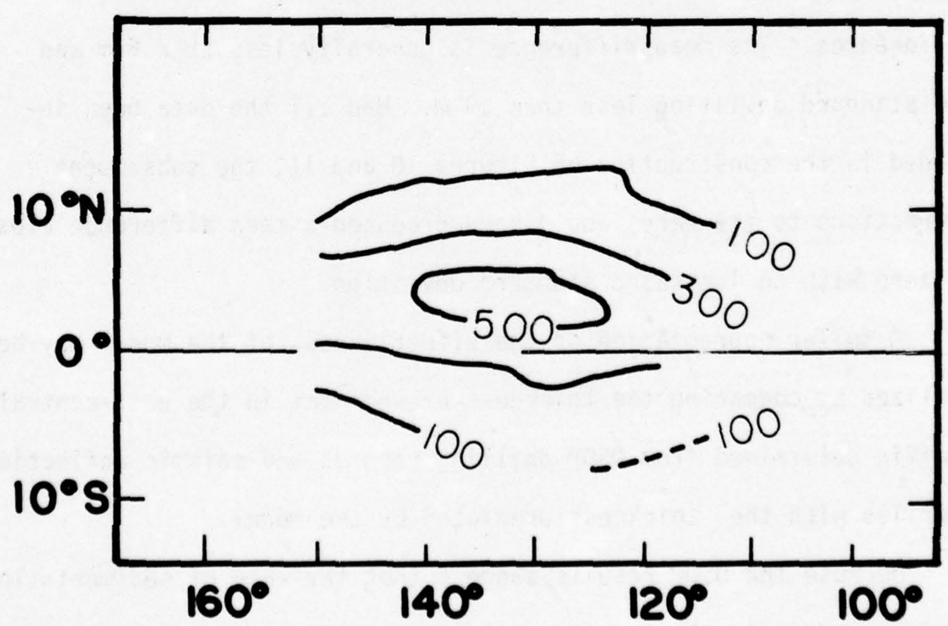

Figure 14. Contoured thickness of sediment in east central Pacific younger than 36 my predicted by model ESP. Contours are in meters; predictions made at 5^{0} intervals of longitude, 2.5^{0} latitude.

Eocene, 36 my was chosen as an arbitrary but reasonable age for comparison. In Figure 13 the observed DSDP thicknesses of sediment younger than 36 mybp (Listing, Appendix I) has been plotted and contoured. The predicted thicknesses were generated on a grid every 5^{0} of longitude from 150^{0} W to 115^{0} W and every 2.5^{0} of latitude from 15^{0} N to 5^{0} S. The resulting thicknesses were plotted and contoured (Fig. 14).

Comparison of the two figures shows that almost any point will show a predicted thickness (ESP) equal to or slighly greater than the observed thickness (DSDP) and that the center of maximum predicted thickness is about a degree farther north than the center of observed maximum thickness.

Considering all of the sources of error that go into the model, the agreement between Figures 13 and 14 is remarkably good. If one accepts the agreement as satisfactory, then the conclusion follows that depth, latitude, and time are, to the first order, the variables that describe sedimentation in the east central Pacific, and, therefore, the curves of Figures 10 and 11 give quantative expression to the variation of sedimentation with time.

CONCLUSIONS

These experiments show that to a first order, depth of water, distance from the equator, and temporal dependency of rates and carbonate percentage are adequate for the prediction of sedimentation patterns in the east central Pacific Ocean. The agreement between the predicted and observed thicknesses is, however, not perfect. A portion of the difference must come from errors of measurement of sediment properties

and a portion from incorrect assumptions. Analysis of errors (Appendix IV) indicates that the effect of errors in the rate or position of the pole of rotation will cause a relatively small error in predicted sediment thicknesses.

Longitudinal effects compared with the effects of resedimentation and erosion are insignificant -- for good reason. The equator and the direction of spreading are subparallel in the east central Pacific so that to the west, away from the rise crest, the water deepens and dissolution increases. As a result, increased dissolution tends to mask changes in the rate of sediment production in the surface waters.

As an example of the effect of masking by dissolution, consider a site located some distance west of the rise crest where the water is 5000 m deep. Assume that only 5 percent of the sediment produced in the surface waters passes into the sedimentary record. If the production in the surface waters proceeds at the rate of 50 m/my, then only 2.5 m/my will be deposited on the sea floor. If the rate increases to 70 m/my, only 3.5 m/my will be deposited. The precision of the method used here is simply not good enough to delineate such small differences, and thus, the effects of resedimentation and erosion can be expected to dominate over the effects of longitude.

The sedimentation rate curve (Fig. 11) and the carbonate curve (Fig. 10) provide a quantification of mean sedimentation rate for the east central Pacific. From 2 to 16-18 mybp, the processes of sedimentation were less than average with slight increase at about 14 mybp. From 16-18 mybp to 22-23 mybp sedimentation rates and carbonate percentages increased to greater than average values with a climax at

22-23 mybp. From 22-23 mybp to about 40 mybp, sedimentation rate and carbonate percentage started a slow decrease.

These rate and carbonate curves suggest that the data of the Deep Sea Drilling Project are useful for demarking long period changes in sedimentation pattern in the east central Pacific, but that small scale fluctuations of only several million years duration (van Andel et al., 1975) are probably beyond the resolution of the data.

APPENDIX I

Program ROPH

by

Jerry L. Matthews

<u>Software and Hardware</u>

Fortran IV, IBM 1800 computer.

<u>Purpose</u>

Given the latitude and longitude of a DSDP hole and pertinent data on thickness, age, density, and carbonate percent of the sediment, program ROPH rotates the point back through time by a sequence of iterations. At each iteration, the sedimentation rate or the carbonate percent, depending on the option selected, plots on a grid with latitude as abscissa, depth of water as ordinate.

<u>Variables</u>

Many of the variables appearing under the <u>In</u> column are printed or plotted. Only variables generated by the computer and printed or plotted appear under the <u>Out</u> column.

<u>In</u>

MAPE = Option for suppressing the printed output. MAPE = 1 specifies output; MAPE = 0 suppresses output.

IRITE = Option for suppressing the listing of input data and depth correction for each hole. IRITE = 1 specifies output; IRITE = 0 suppresses output.

IRATE = Option for plotting either the rate of deposition or lithology (expressed as percent carbonate) for hole. IRATE = 0 specifies plotting of lithology, IRATE = 1 specifies corrected rate.

JZAP = Option for plotting hole number in conjunction with rate of deposition or lithology. JZAP = -1, the hole number plots with first point only; JZAP = 1, the hole number plots with all points; JZAP = 0, suppresses hole number.

IG(M1) =	A 12 variable array used for conversion of floating point to alphameric format. Enter at 0123456789.*
A =	Alphameric data printed on first iteration for each hole. Enter as A=NA (abbreviation for not applicable).
JJ =	Number of holes to be read.
BLAD1 =	Latitude of first pole of rotation entered as the decimal fraction of degrees. Use north projection only with positive sign.
BLAD2 =	Latitude of second pole of rotation. Conventions same as BLAD1.
BLOD1 =	Longitude of first pole of rotation entered as decimal fraction of degrees. Use positive values for east longitude, negative for west longitude.
BLOD2 =	Longitude for second pole. Conventions same as BLOD1.
TEST1 =	Age (my) for change from first pole to second pole of rotation and for change in rate of rotation from RATE2 to RATE1.
TEST2 =	Age (my) for change from RATE3 to RATE2.
TEST3 -	Age (my) for change from RATE4 to RATE3.
RATE1 =	Rate of rotation (deg./m.y.) for first pole; determines rate between ages 0 and age TEST 3.
RATE2 =	Rate of rotation (deg./m.y.) for first pole; determines rate between ages TEST3 and TEST2.
RATE3 =	Rate of rotation (deg./m.y.) for first pole; determines rate between ages TEST2 and TEST1.

RATE4 = Rate (Deg./m.y.) for second pole; determines rate for all ages greater than TEST1.

C,C2,C3,C4,C5, and C6 = six variables of 4 characters each that incorporate heading used during plotting.

B(IN) = Seven variables that incorporate the scales for the ordinate and abscissa of the latitude and depth of water grid; enter as -20. 0.020.030004005000.

ZLIM1 = Entered in millions of years; together with variable ZLIM2 provides option for setting limits on portion of hole to be plotted and printed; points whose age is less than ZLIM1 or greater than ZLIM2 will be skipped.

MM(J) = Number of points for each hole to be rotated during execution.

HOLE = Alphameric number of DSDP hole; used by plotter and printer.

CLAD1 = Latitude of DSDP hole (same convention as BLAD1).

CLOD1 = Longitude of DSDP hole (same convention as BLOD1).

DEPTH = Depth of water (m) at DSDP site.

AGE(B) = Age (mybp) of basement at DSDP Site.

AGE(M) = Age (mybp) of sediment at top of each coded interval of DSDP core.

DIST(M) = Thickness (m) of sediment whose age is less than AGE(M)

FLITH(M) = Lithology (percent carbonate) of interval in DSDP core of age AGE(M) to AGE(M-1).

DENS(M) = Density of interval in DSDP core of age (AGE(M) to AGE(M-1).

Out

PDEPH = Depth of crust (m) determined from subsidence curve.

DEPHC = Depth correction (m) carried through all calculation of water depth; measures difference between calculated and observed elevation of crust.

ADENS = Weighted mean density of sediment column, computed from densities entered from DSDP holes.

RATE = Sedimentation rate (m/my) of interval uncorrected for compaction.

HO = Sedimentation thickness (m) of an interval corrected for compaction.

URATE = Sedimentation rate (m/my) corrected for compaction (calculated from thickness HO).

CERAT = Weighted mean rate (m/m.y.) of sedimentation for sediment younger than AGE(M).

CLAD = Latitude (deg.) of data point after rotation; negative values are south latitude.

CLOD = Longitude (deg.) of data point after rotation; negative values are west longitude.

Subroutines

ALPHA, ROCCW, CRUST, COUNT, CPRIM, XTAN, FTAN.

Features

Will rotate points around a first pole (Hawaiian) and a second pole (Emperor). Rotation is counterclockwise. For the first pole three intervals of time may be defined, during which a different rate of rotation applies. Although written for rotation of the Pacific plate, the program is general and will work for any plate requiring counterclockwise rotation, as

long as north projection is used for the pole. The plotting feature may be surpressed.

Input of data

Images numbered 1 through 11 require 1 card. Variables on image number 12 will normally require more than 1 card.

Image Number	Read Statement	Format
1	MAPE	(I2)
2	IRITE	(I2)
3	IRATE	(I2)
4	JZAP	(I2)
5	IG(M1), M1 = 1, 12	(12A1)
6	A, JJ, BLAD1, BLOD1, BLAD2, BLOD2, TEST1, TEST2, TEST3	(A2,I3,7F10.2)
7	RATE4, RATE3, RATE2, RATE1	(4F10.2)
8	C, C2, C3, C4, C5, C6	(6A4)
9	B (IN), IN = 1, 7	(7A4)
10	ZLIM1, ZLIM2	(2F10.2)
11	MM(J), HOLE, CLAD1, CLOD1, DEPH, AGEB	(I6, 3X, A3, 4F10.2)
12	AGE(M), DIST(M), FLITH(M), DENS(M), M = 1, MMM	(2F10.1, 6X, A4, F10.0)

Method

1. Read in images 1 through 10.

Date that is pertinent to all holes is read in, including coded values that specify plotting and printing options, headings used by the plotter, and poles

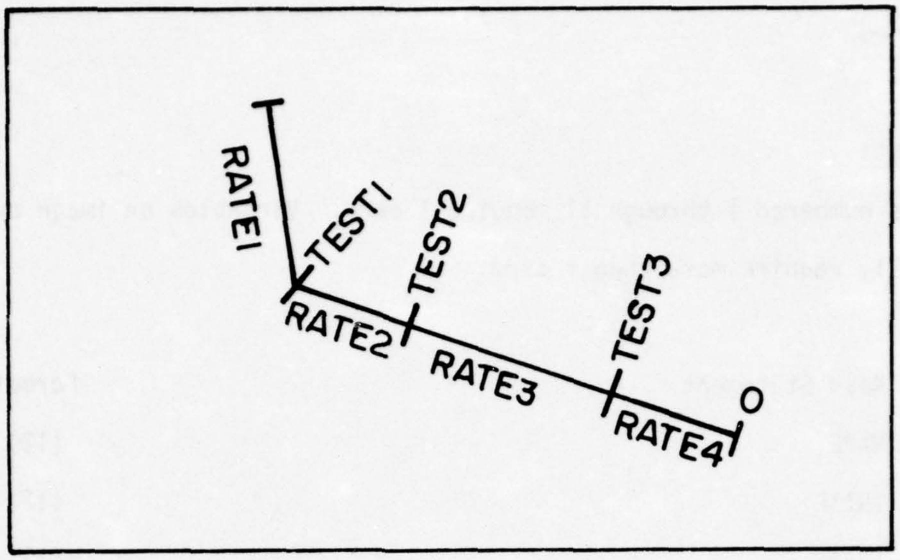

Figure 1.1. Variables TEST1, TEST2, and TEST3 set off intervals of time during which the rates of rotation RATE1, RATE2, and RATE3 govern rotation of points around the first pole (Hawaiian); RATE4 applies to second pole (Emperor), and, thus, age TEST3 marks the change of pole position.

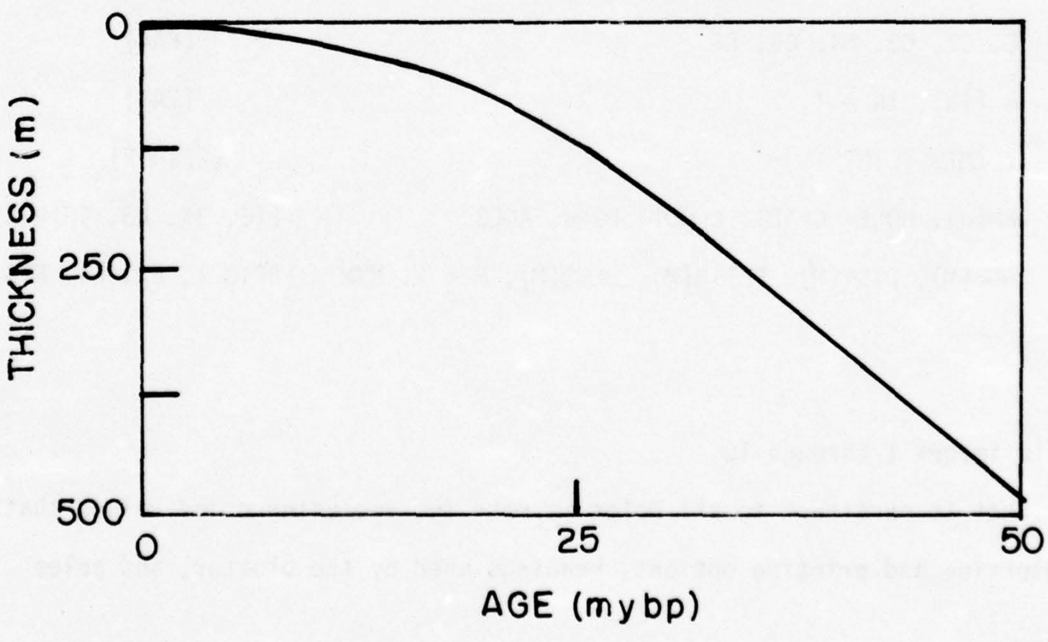

Figure 1.2. Typical sedimentation curve used to determine thickness as a function of age.

and rates of rotation. For the first pole of rotation (BLAD1, BLOD1) three intervals of time (TEST1, TEST2 and TEST3) must be defined, during which three rates of rotation (RATE2, RATE3, and RATE4) apply. RATE4 applies for the second pole (BLAD2, BLOD2). Figure 1.1 shows the relationship.

2. Plot and annotate grid.

The grid, approximately 20 inches by 17 inches, has latitude as abscissa, being divided in 40 parts of 1 degree each, reaching from 20°N to 20°S and depth of water as ordinate, being divided in 28 parts of 100 m each, reaching from 2700 to 5500 m; however, a wide enough margin remains so that the paper will accommodate the plotting of depths as shallow as 2300 m and as deep as 6300 m. The depth is annotated at 3000, 4000, and 5000 meters, the latitude at 20.0°, 0.0°, and -20.0° (the negative value indicates south latitude). The heading normally specifies the span of time (variables C, C2, C3, C4, C5, C6) for which the plot is applicable. Either rate of sedimentation or percent of carbonate will plot, depending on the option selected (variable IRITE).

3. Read image 11

This is a heading card that specifies the number of points that will be read in by image 12, and also includes the DSDP hole number, the latitude and longitude of the hole, and the age of the basement.

4. Read image 12

These are the summary cards that describe the data of the DSDP cores and set the increment used during the rotation. Variable AGE(M), Figure 1.2, is determined by selecting a set of ages from the curve (the interval between ages need not be constant). Noting the thickness of sediment for each age provides the values for variable DIST(M). Variable FLITH(M) is the mean

carbonate percentage and DENS(M) the mean density of the interval marked off by AGE(M) and AGE(M-1).

5. Determine the weighted mean density

To make the isostatic correction for the elevation of the crust at the drilling site after removal of the sediment, the density of the sediments must be estimated. The weighted mean density provides this estimate:

$$\bar{D} = \sum_{i}^{2} D_i T_i / \Sigma T_i \qquad (1.5.1)$$

where

$\bar{D}$ = weighted mean density (ADENS)

D_i = interval density (DENS(M))

T_i = thickness of sediment for various intervals

6. Determine elevation of crust from subsidence curve

The elevation of the crust is determined by the subsidence curve of Sclater and Detrick (1973), as a function of age, AGE(M). The descriptive parameters are contained in subroutine CURVE. Figure 1.3 shows a schematic illustration of the curve.

7. Determine the crustal correction

This is the correction that adjusts the elevation of the crust at the DSDP site to compatibility with the elevation of the crust predicted by the subsidence curve, Figure 1.3. The steps involved are: a) determine the depth of the crust predicted by the subsidence curve (Step 6), b) determine the estimated depth of the crust at the DSDP hole with the sediment cover removed and isostatic balance restored, and c) subtract the two values (steps a and b) to determine the correction.

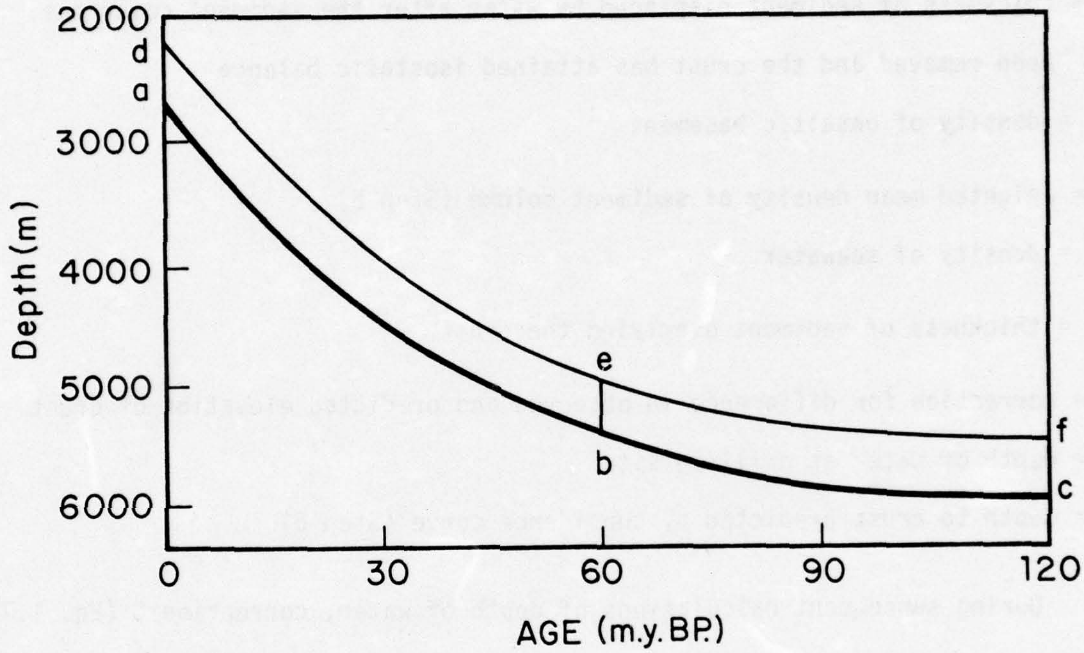

Figure 1.3. A schematic representation of the subsidence curve (Sclater, Anderson, and Bell, 1971), showing the effect of adding the crustal correction (Eq. 1.7.2). Curve abc is the original subsidence curve; curve def is the corrected curve; distance eb is the correction (Eq. 1.7.2).

The correction is expressed by:

1.7.1 $$W = [(D_b - \bar{D})]/(D_b - D_s)] \; T_m$$

1.7.2 $$C = W + H - P$$

where

W = thickness of sediment displaced by water after the sediment cover has been removed and the crust has attained isostatic balance

D_b = density of basaltic basement

$\bar{D}$ = weighted mean density of sediment column (Step 5)

D_s = density of seawater

T_m = thickness of sediment overlying the crust

C = correction for difference in observed and predicted elevation of crust

H = depth of water at drilling site

P = depth to crust predicted by subsidence curve (Step 6)

During subsequent calculations of depth of water, correction C (Eq. 1.7.2) will be added to the crustal elevation determined by the subsidence curve (Figure 1.3.). The effect of this addition is to produce a second curve parallel to the subsidence curve and separated from it by the distance C (Eq. 1.7.2). This second curve will be the one to which isostatic corrections are applied.

8. Rotate the point

This rotation produced the new latitude of the point which is plotted as a coordinate on one of the grids (Fig. 1). The rotation of the point and its

subsequent latitude is determined by solution of spherical triangles ABC, then ABC', Figure 1.4, given 2 sides of the triangle and the included angle. Referring to Figure 1.4, the point A is the spin axis of the earth, B the pole of rotation, and C the point to be rotated to its new position C'.

For triangle ABC the included angle at CAB is the absolute difference between the longitude of the point at C and the pole at B. Angle b is 90° minus the latitude of the starting point C, angle c is 90° minus the latitude of the pole B. Subroutine ROCCW makes these determinations and controls rotation of the point. The two sides, b and c, and the included angle ABC, determined by ROCCW, provide the substance of the solution for the side a and the angle ABC of triangle ABC, Figure 1.4. Because rotation around the pole at B requires the point C to trace out a line of latitude around the pole, side a' must equal side a, which leads to the solution of triangel ABC', using sides c and a', and included angle ABC'. Side c has the same value as before by identity, and side a' is equal a. The included angle ABC', as illustrated in Figure 1.4, is equal to angle ABC plus angle CBC', which is determined in subroutine COUNT by multiplying the rate of rotation times the length of time, AGE(M). After solution of triangle C'AB by subroutine CPRIM, the latitude of point C' is determined from angle b', being 90° minus b'. The longitude of the point is angle CAB minus angle C'AB, the quantity added to the longitude of point C. These conversions of spherical angles to latitude and longitude are made by subroutine ROCCW. Solution of the spherical triangles is accomplished by subroutine CPRIM using the following equations:

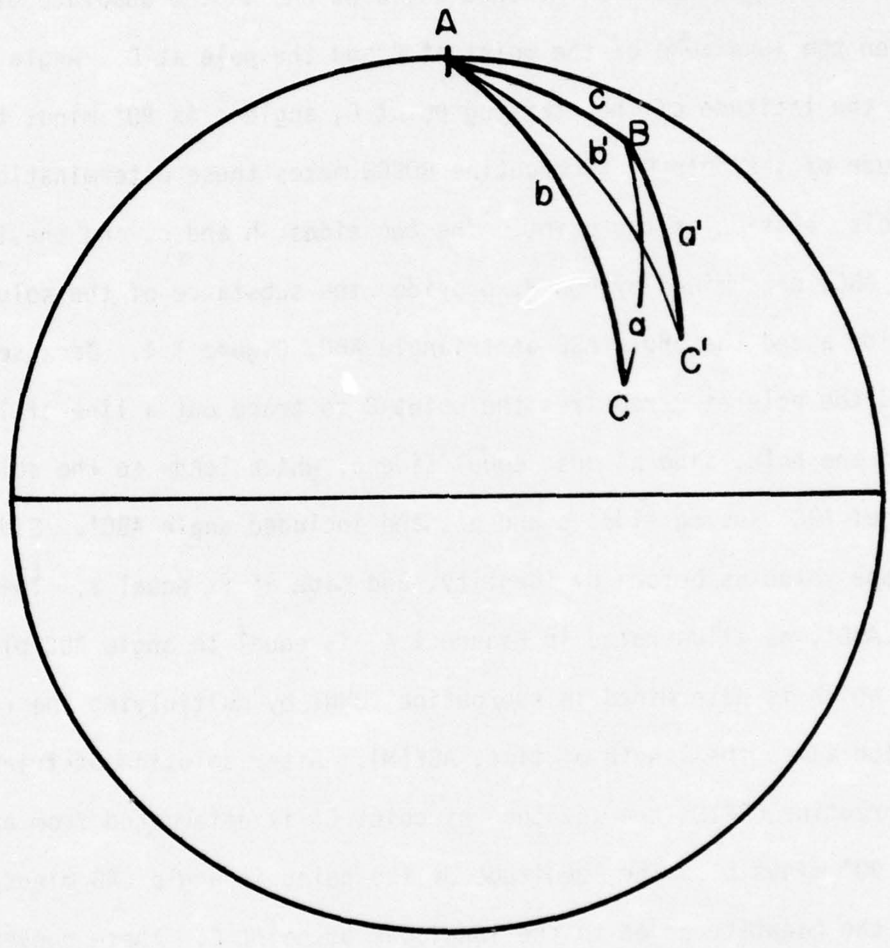

Figure 1.4. Great circles on a sphere that form spherical triangles ABC and ABC' used for rotation of points on a sphere. Point A is the spin axis, point B the pole of rotation, and point C the point to be rotated to position C'.

$$\tan 1/2\ (C + B) = [\cot 1/2\ A \cos 1/2\ (c-b)]/\cos 1/2\ (c + b)$$

$$\tan 1/2\ (C - B) = [\cot 1/2\ A \sin 1/2\ (c - b)]/\sin 1/2\ (c + b)$$

$$\tan 1/2\ a = [\tan 1/2\ (c - b) \sin 1/2\ (C + B)]/\sin 1/2\ (C - B)$$

where angles b and c are the sides of the triangle and angle A is the included angle.

The determination of angle CBC' by program ROPH is not so straightforward as presented above, because the rate of rotation can be made to vary. Figure 1.1 illustrates this point. If the age, AGE(M), is less than age TEST3, the angular distance is RATE4 times AGE(M). If the age, AGE(M), is greater than age TEST3, but less than age TEST2, the angular distance is RATE4 times TEST3, plus RATE3 times the quantity AGE(M) minus TEST3. Solutions to the two remaining possibilities, greater than TEST2, but less than TEST3, and greater than TEST3, are determined by analogous procedures.

For the arrangement of point C and pole B illustrated in Figure 1.4, angle ABC' is determined by addition of angle ABC and CBD', but if point C were to lie counterclockwise of pole B, subtraction is appropriate. Complecations arise if the longitude of point C equals the longitude of point B and where a rotation swings point C from a position clockwise to B to one counterclockwise of B. Subroutine COUNT tests for these possibilities and uses the appropriate algorithm to determine angle ABC'.

To summarize, program ROPH determines the angular distance of rotation (angle CBC'), subroutine ROCCW directs the rotation by calling subroutine CPRIM, which solves for the unknown side a and angle ABC of the spherical

triangle, given side a and c and included angle CAB, subroutine COUNT calculates the angle CBC' from which angle ABC' is determined, and subroutine CPRIM solves for sides b and angle C'AB, using side a', side c, and included angle ABC'. Subroutine ROCCW converts the angular measures to latitude and longitude.

9. Determine depth of water

During the execution of the program, layers of sediment, in concept, are shipped from the pile of sediments that overlies the crust. The effects of the removal of the sediment, the consequent isostatic rebound of the crust, and the elevation of the crust predicted by its decrease in age (the subsidence curve is a function of age) must be calculated. Depth of water is determined by finding the crustal elevation from the subsidence curve (subroutine CRUST), adding the crustal correction (Step 7), and making an isostatic correcton for the thickness of sediment that remains.

This may be expressed as:

1.9.1 $P_n = P_s - W_n + C$

where

P_n = new depth of water

P_s = depth of water determined from subsidence curve

W_n = thickness of sediment displaced by water (calculated from equation 1.7.1, where Tm is equal to the reduced thickness of sediment and $\bar{D}$ is the weighted mean density of this sediment)

C = correction for difference in observed and predicted elevation of the crust (Equation 1.7.2).

10. Convert latitude and longitude to positive and negative values.

Through a sequence of tests latitude is converted to a negative value if southern, and longitude is converted to a negative value less than 180° if western.

11. Plot, or plot and print either rate of sedimentation or percentage of carbonate.

Depending on the options that are set, values will be plotted, or plotted and printed. For plotting the carbonate percentages, the values are simply retrieved from storage. If the rate of sedimentation is specified, the uncorrected rate of sedimentation and the adjusted rate of sedimentation (adjusted to rate calculated from thickness adjusted to 76% porosity) are printed, but only the adjusted rate may be plotted.

The steps in computing the adjusted sedimentation rate are : a) determine the thickness of sediment for the interval; this is the difference between two successive thicknesses entered as data (Step 4, Card 12), b) determine the porosity from the density of the sediment according to the equation of Hamilton (1959),

1.11.1 $$\frac{D_s - D_g}{D_w - D_g} = N$$

where

D_s = density of the interval

D_g = mean density of the grains

D_w = density of seawater

N = porosity of sediment

and c) transform the thickness to the value it would have were its porosity 76%

by the equation of Schlanger et al., 1973,

1.11.2 $$H_a = (1. - N)/(1. - .76))\ H_o$$

where

N = porosity of sediment

H_o = unadjusted thickness

H_a = adjusted thickness

and, d) determine the unadjusted and adjusted sedimentation rate from the appropriate thickness.

12. Return to Step 8

ROPH LISTING

```
      DIMENSION DIST(60),AGE(60),FLITH(60),MM(60),B(20),DENS(60),VE
     1L(60),IG(12)
C
C...........DEFINITION OF VARIABLES............. ..............................
C
C  MAPE.....OPTION FOR PRINTING OUPUT
C     1.....IF OUTPUT DESIRED
C     0.....IF OUTPUT NOT DESIRED
C  IRITE....OPTION FOR PRINTING INPUT
C     1.....IF PRINTING DESIRED
C     0.....IF PRINTING NOT DESIRED
C  IRATE....OPTION FOR PLOTTING RATE OF SEDIMENTATION OR LITHOLOGY
C     1.....IF RATE OF SEDIMENTATION
C     0.....IF LITHOLOGY(PERCENT CARBONATE)
C  JZAP.....OPTION FOR PLOTTING HOLE NUMBER IN CONJUNCTION WITH RATE
C           OF SEDIMENTATION OR LITHOLOGY
C    -1.....IF HOLE NUMBER WITH FIRST POINT ONLY
C     0.....IF NO HOLE NUMBER
C     1.....IF HOLE NUMBER WITH EACH POINT
C  IG(M1)...ALPHAMERIC ARRAY USED WITH SUBROUTINE ALPHA.  ENTER AS 0123456789.*
C  A........ALPHAMERIC ABREVIATION FOR 'NOT APPLICABLE'.  ENTER AS NA
C  JJ.......NUMBER OF HOLES, CONTROLS MAIN LOOP.
C  BLAD1....LATITUDE OF FIRST POLE IN DECIMAL FRACTION OF DEGREES.  USE
C           NORTH PROJECTION
C  BLAD2....LATITUDE OF SECOND POLE IN DEGREES.  USE NORTH PROJECTION
C  BLOD1....LONGITUDE OF FIRST POLE, IN DECIMAL FRACTION OF DEGREES.
C           +....IF EAST
C           -....IF WEST
C  BLOD2....LONGITUE OF SECOND POLE.  SAME CONVENTION AS BLOD1
C  TEST1....AGE(MILLIONS OF YEARS) FOR SHIFT FROM FIRST TO SECOND POLE, FROM
C           RATE2 TO RATE1
C  TEST2....AGE(MILLIONS OF YEARS) FOR SHIFT FROM RATE3 TO RATE2.
C  TEST3....AGE(MILLIONS OF YEARS) FOR SHIFT FROM RATE4 TO RATE3.
C  RATE1....RATE OF ROATATION(DEG/MY) FOR FIRST POLE, FROM ZERO YEARS TO
C           TEST3 YEARS.
C  RATE2....RATE OF ROTATION(DEG/MY) FROM TEST3 TO TEST2 YEARS.
C  RATE3....RATE OF ROTATION(DEG/MY) FROM TEST2 TO TEST1 YEARS.
C  RATE4....RATE OF ROTATION(DEG/MY) FOR AGES OLDER THAN TEST1 YEARS.  GOVERNS
C           ROTATION AROUND SECOND POLE(BLAD2, BLOD2).
C  C2-C6.....SIX ALPHAMERIC VARIABLES USED AS HEADINGS BY PLOTTER FOR
C             GRID.  ENTER AS -20. 0.020.030040005000
C  ZLIM1....ITERATIONS YOUNGER THAN THIS VALUE NOT PLOTTED OR PRINTED
C  ZLIM2....ITERATION OLDER THAN THIS VALUE NOT PLOTTED OR PRINTED
C  MM(J)....NUMBER OF POINTS PER HOLE.
C  HOLE.....NUMBER OF HOLE(ALPHAMERIC).
C  CLAD1....LATITUDE OF HOLE.  (SAME CONVENTION AS BLAD1)
C  CLOD1....LONGITUDE OF HOLE(SAME CONVENTION AS BLOD1).
C  DEPH....DEPTH OF WATER(METERS).
C  AGEB.....AGE OF BASEMENT(MY).
C  AGE(M)...AGE OF SEDIMENT AT TOP OF INTERVALS IN CORE.
C  DIST(M)..THICKNESS OF SEDIMENT WHOSE AGE IS LESS THAN AGE(M).
C  FLITH(M).LITHOLOGY(PERCENT CARBONATE) OF INTERVAL.
C  DENS(M)...DENSITY OF INTERVAL(IF INTERVAL HAS HIATUS, ENTER DENSITY OF ZERO).
C
    9 FORMAT(I2)
   10 FORMAT(12A1)
```

```
.11 FORMAT(A2, I5, 7F10.2)
 12 FORMAT(4F10.2 )
 13 FORMAT(A2, I3, 11F10.2)
 14 FORMAT(6A4)
 15 FORMAT(7A4)
 16 FORMAT(2F10.2 )
 17 FORMAT(30X, 2F15.2)
 18 FORMAT(2A4 )
 19 FORMAT(A4)
 20 FORMAT(I6, 3X, A3, 4F10.2)
 21 FORMAT(//, 1X,'HOLE NUMBER =',A3)
 22 FORMAT(2F10.1,6X,A4,2F10.0)
 23 FORMAT(1X,'LATITUDE IS',F7.2,' LONGITUDE IS',F8.2,'  DEPTH IS',F8.
   12,'  BASEMENT AGE IS',F7.2)
 24 FORMAT(1X,'DEPTH OF CRUST(PDEPH) IS',F8.2,2X,'DEPTH CORRECTION(DEP
   1HC) IS',F8.2,' AVERAGE DENSITY(ADENS) IS',F6.2)
 25 FORMAT(/,10X,'AGE OF POINT', 10X,'DEPTH IN HOLE', 10X,'LITHOLOGY O
   1 F POINT', 8X, 'DENSITY', 8X, 'VELOSITY')
 26 FORMAT(6X,F10.2, 13X, F10.2, 23X, A4,18X, F4.2, 19X, F4.2)
 27 FORMAT(/,' AGE OF    DEPTH  UNCORC    COR     COR   CUM COR  LITHOLO
   1GY  PRESL   PRES      WATER')
 28 FORMAT('  POINT  IN HOLE  RATE  INTERVAL  RATE   RATE
   1    LAT     LONG      DEPTH')
 29 FORMAT(F7.1,F8.1,A7,3A8,A9,F10.2,2F9.2)
 30 FORMAT(F7.1,F8.1,F7.1,3F8.1,A9,F10.2,2F9.2)
 31 FORMAT(5A1,A3)
 32 FORMAT(5A1)
 33 FORMAT(A4, A3)
 34 FORMAT(A4)
 35 FORMAT(42X,'VARIABLES USED THROUGHOUT',//)
C
    READ(1,9) MAPE
    READ(1, 9) IRITE
    READ(1,9) IRATE
    READ(1,9) JZAP
    READ(1, 10) (IG(M1), M1 = 1, 12)
    READ(1, 11) A, JJ, BLAD1, BLOD1, BLAD2, BLOD2, TEST1, TEST2,
   1TEST3
    READ(1, 12)RATE4, RATE3, RATE2, RATE1
C  SKIP ADVANCES PAPER TO TOP OF A NEW PAGE
    CALL SKIP
    WRITE(2, 35)
    WRITE(2, 13) A, JJ, BLAD1, BLOD1, BLAD2, BLOD2, TEST1, TEST2,
   1TEST3, RATE4, RATE3, RATE2, RATE1
    READ(1,  14) C, C2, C3, C4, C5, C6
    WRITE(2, 14)  C, C2, C3, C4, C5, C6
    READ(1, 15) (B(IN), IN = 1,7)
    WRITE(2, 15) (B(IN), IN = 1,7)
    READ(1, 16) ZLIM1, ZLIM2
    WRITE(2, 17) ZLIM1, ZLIM2
C  FRAME CLEARS IMAGES FROM PLOTTING SCOPE
    CALL FRAME
C  DRAW GRID AND ANNOTATE
C  SENDS PLOTTER OFF PAPER
    CALL FPLOT (1, 0.0, 29.0)
C  SETS NEW SCALE
    CALL SCALF(.5,.006, -20.,6700.)
C  SETS CONSTANT WHICH INVERTS LEGEND
```

```
      Y = 135. * .0174533
      X = 180. * .0174533
C  PLOTS HEADING
      CALL FCHAR(12.,2500., .40, .40, X)
      WRITE(8,14) C, C2, C3, C4, C5, C6
C  POSITIONS PEN TO DRAW GRID
      CALL FPLOT(1, -20., 5500.)
C  NEXT FOUR STATEMENTS DRAW GRID
      CALL FGRID(3, -20., 5500., 100., 28)
      CALL FGRID (0, -20., 2700., 1., 40)
      CALL FGRID(1, 20., 2700., 100., 28)
      CALL FGRID(2, 20., 5500., 1., 40)
C  PLOTS HEADING '-20.0'
      CALL FCHAR(-17.9, 2650., .3, .35,X)
      WRITE(8, 18) B(1), B(7)
C  PLOTS HEADING '0.0'
      CALL FCHAR(1.50, 2650., .3, .35, X)
      WRITE(8, 19) B(2)
C  PLOTS HEADING '20.0'
      CALL FCHAR(21.8, 2650., .3, .35, X)
      WRITE(8,19) B(3)
C  PLOTS HEADING '3000'
      CALL FCHAR(23.2, 3024., .3, .35, X)
      WRITE(8, 19) B(4)
C  PLOTS HEADING '4000'
      CALL FCHAR(23.2, 4024., .3, .35,X)
      WRITE(8,19) B(5)
C  PLOTS HEADING '5000'
      CALL FCHAR(23.2, 5024., .3, .35, X)
      WRITE(8, 19) B(5)
C
C  SET LOOP THAT PROCESSES EACH HOLE
C
      DO 3000 J = 1, JJ
      TBOSS = 0.0
      RTOT = 0.0
      IZAP = JZAP
C  READ HEADING FOR EACH HOLE
      READ(1, 20) MM(J), HOLE, CLAD1, CLOD1, DEPH, AGEB
      WRITE(2,21) HOLE
      WRITE(2,23) CLAD1,CLOD1, DEPH, AGEB
      MMM = MM(J)
      READ(1, 22) (AGE(M),DIST(M),FLITH(M),DENS(M),VEL(M), M=1,MMM)
C  FROM TOTAL TO GDENS COMPUTES THE WEIGHTED AVERAGE DENSITY OF THE ENTIRE
C  SEDIMENT PILE, WHICH IS USED TO COMPUTE THE INITIAL DEPTH CORRECTION(DEPHC).
      TOTAL = 0.0
      DO 1600 M = 2, MMM
      TOT =(((DENS(M) + DENS(M - 1))* .5) * (DIST(M) - DIST(M - 1)))
      TOTAL = TOTAL + TOT
 1600 CONTINUE
      ADENS = TOTAL / DIST(MMM)
      CALL CRUST(AGEB, PDEPH)
      W =  ((3.3 - ADENS)/2.3) * DIST(MMM)
      QDEPH = DEPH + W
      DEPHC = QDEPH - PDEPH
C  IF DEPC IS NEGATIVE, SEA FLOOR IS TOO SHALLOW
C  IF DEPHC IS POSITIVE, SEA FLOOR IS TOO DEEP
      WRITE(2, 24) PDEPH,DEPHC,ADENS
```

```
      IF(IRITE) 110, 110,109
  109 WRITE(2, 25)
      WRITE(2, 26) (AGE(M), DIST(M),FLITH(M),DENS(M), VEL(M),M= 1, MMM)
  110 IF(MAPF) 130,130,165
  165 WRITE(2, 27)
      WRITE(2, 28)
      IF(ZLIM1 - .0009) 120, 120, 130
  120 WRITE(2,29)  AGE(1),DIST(1),A,A,A,A,FLITH(1),CLAD1,CLOD1,DEPH
C
C  ROTATE POINTS
C
  130 DO 2000 M = 2, MMM
      IF((AGE(M) + .0009) - ZLIM1) 2000, 140, 140
  140 IF(AGE(M) - (ZLIM2 + .0009))205, 205, 2000
  205 IF(AGE(M) - TEST3) 200, 210, 210
  200 BBPP1 =  AGE(M) * RATE4 * .0174533
      CALL ROCCW (BLAD1, BLOD1, CLAD1, CLOD1, BBPP1, CLAD, CLOD)
      GO TO 600
  210 IF(AGE(M) - TEST2) 220, 230, 230
  220 BBPP1 = (TEST3*RATE4 + (AGE(M) - TEST3)*RATE3)* .0174533
      CALL ROCCW(BLAD1, BLOD1, CLAD1,CLOD1, BBPP1, CLAD, CLOD)
      GO TO 600
  230 IF(AGE(M) - TEST1) 240, 250, 250
  240 BBPP1 = (TEST3*RATE4 + (TEST2 - TEST3)*RATE3 + (AGE(M) - TEST2) *
     1RATE2) * .0174533
      CALL ROCCW(BLAD1, BLOD1, CLAD1, CLOD1, BBPP1, CLAD, CLOD)
      GO TO 600
  250 BBPP1= (TEST3*RATE4 +(TEST2- TEST3)*RATE3 + (TEST1 - TEST2)*
     1RATE2) * .0174533
      CALL ROCCW(BLAD1, BLOD1, CLAD1, CLOD1, BBPP1, CLAD, CLOD)
      CAD = CLAD
      COD = CLOD
      CALL ROCCW(BLAD1, BLOD1, BLAD2, BLOD2, BBPP1, BA2, BO2)
      BBPP2 = ((AGE(M) - TEST1)*RATE1)* .0174533
      CALL ROCCW(BA2, BO2, CAD, COD, BBPP2, CLAD, CLOD)
  600 AGET = AGEB - AGE(M)
      XTHIC = DIST(MMM) - DIST(M)
C  DETERMINE DEPTH OF POINTS
      CALL CRUST(AGET, PDEPH)
      M1 = M
      TOTA = 0.0
      TTOT = 0.0
C  DETERMINE AVERAGE DENSITY
      DO  700 J1 = M1, MMM
      TTOT = ((DENS(J1) +DENS(J1 -1))*.5)*(DIST(J1) - DIST(J1-1))
      TOTA = TOTA + TTOT
  700 CONTINUE
      BDENS = TOTA /(DIST(MMM) - DIST(M  - 1))
      W = ((3.3 - BDENS) /2.3) * XTHIC
      PDEPH = PDEPH - W
      PDEPH = PDEPH + DEPHC
      RATE = (DIST(M) - DIST(M - 1)) / (AGE(M) - AGE(M - 1))
      RTOT = RTOT + RATE*(DIST(M) - DIST(M-1))
      ARATE = RTOT/DIST(M)
  804 IF(CLOD) 805, 805, 806
  805 ACLOD = CLOD
      GO TO 808
  806 IF(CLOD - 180.) 805, 805, 807
```

```
  807 ACLOD =  CLOD - 360.
C   DETERMINE CORRECTED INTERVAL THICKNESSES
  808 IF(DENS(M) - .001) 812, 812, 814
  812 AVDEN = (DENS(M) + DENS(M-1)) * .5
      GO TO 819
  814 IF(DENS(M-1) - .001) 816, 816, 812
  816 AVDEN = DENS(M)
C   DETERMINE RATES OF SEDIMENTATION

  819 PSI = (AVDEN - 2.6) / (1.005 - 2.6)
      HO =((1. - PSI)/(1. - .76))* (DIST(M)-DIST(M-1))
      URATE = HO/(AGE(M) -AGE(M-1))
      CRATE = URATE * (DIST(M) -DIST(M-1))
      TBOSS = TBOSS + CRATE
      CERAT = TBOSS/DIST(M)
      IF(MAPE) 909, 909, 900
  900 WRITE(2,30)AGE(M),DIST(M),RATE,HO,URATE,CERAT,FLITH(M),CLAD,ACLOD,
     1PDEPH
C   PLOT RATES OR CARBONATE PERCENTAGES
  909 IF(IRATE) 915, 915, 911
  911 CALL ALPHA(URATE,J1,J2,J3,J4)
      CALL FCHAR(CLAD,PDEPH, .06, .07, Y)
      IF(IZAP) 912, 913, 914
  912 WRITE(8, 31) IG(J1),IG(J2),IG(J3),IG(11),IG(J4),HOLE
      IZAP = 0
      GO TO 2000
  913 WRITE(8, 32) IG(J1),IG(J2),IG(J3),IG(11),IG(J4)
      GO TO 2000
  914 WRITE(8, 31) IG(J1),IG(J2),IG(J3),IG(11),IG(J4),HOLE
      GO TO 2000
  915 CALL FCHAR(CLAD, PDEPH, .06, .07, Y)
      IF(IZAP) 921, 922, 924
  921 WRITE(8, 33) FLITH(M), HOLE
      IZAP = 0
      GO TO 2000
  922 WRITE(8, 34) FLITH(M)
      GO TO 2000
  924 WRITE(8, 33)  FLITH(M), HOLE
 2000 CONTINUE
      CALL SKIP
 3000 CONTINUE
      CALL EXIT
      END
```

ROPH OUTPUT

VARIABLES USED THROUGHOUT

```
A 23       72.00    -83.00       17.00   -107.00      42.00      20.00      10.00      0.81      0.81      0.81      0.81
0 - 150. MILLION YRS
25. 0.020.03000400050000
                                          0.00             42.00
```

Note: Interpolated values for carbonate percentages are indicated by double decimals in the Lithology column below. An entry of 80.., for instance, means that the interpolated value for carbonate is 80 percent. Double decimals standing alone or proceeded by zeros indicates that no interpolation was made. The symbol "HHHH" in the Lithology column indicates a hiatus.

HOLE NUMBER = 65
LATITUDE IS 4.35 LONGITUDE IS 176.99 DEPTH IS 6130.00 BASEMENT AGE IS 130.00
DEPTH OF CRUST(PDEPH) IS 5919.05 DEPTH CORRECTION(DEPHC) IS 567.03 AVERAGE DENSITY(ADENS) IS 1.25

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	00..	4.35	176.99	6130.00
1.0	2.5	2.5	0.5	0.5	0.5	0..	4.10	177.76	6130.87
2.0	5.0	2.5	0.6	0.6	0.6	0..	3.85	178.53	6131.84
3.0	9.0	4.0	1.0	1.0	0.8	0..	3.60	179.30	6134.05
4.0	13.0	4.0	1.0	1.0	0.8	0.1	3.35	-179.91	6136.29
5.0	16.0	5.0	1.6	1.6	1.0	0.8	3.11	-179.14	6139.32
6.0	23.0	5.0	1.7	1.7	1.2	0.6	2.86	-178.37	6142.26
7.0	30.0	7.0	2.2	2.2	1.4	00.7	2.61	-177.60	6146.91
8.0	37.0	7.0	2.2	2.2	1.6	0.7	2.36	-176.83	6151.57
9.0	44.5	7.5	2.6	2.6	1.8	0.8	2.11	-176.06	6156.57
10.0	52.0	7.5	2.6	2.6	1.9	1.0	1.86	-175.29	6161.46
11.0	55.0	3.0	1.1	1.1	1.8	0.8	1.61	-174.52	6162.29
12.0	58.0	3.0	1.2	1.2	1.8	0.6	1.36	-173.74	6162.75
13.0	59.0	1.0	0.4	0.4	1.8	1.0	1.11	-172.97	6161.29
14.0	60.0	1.0	0.4	0.4	1.7	0.5	0.86	-172.20	6159.62
15.0	63.0	3.0	1.2	1.2	1.7	0.4	0.61	-171.43	6159.58
16.0	66.0	3.0	1.2	1.2	1.7	0.8	0.36	-170.66	6159.52
17.0	70.0	4.0	1.8	1.8	1.7	1.7	0.11	-169.89	6160.20
18.0	74.0	4.0	1.8	1.8	1.7	2.0	-0.13	-169.12	6160.76
19.0	79.0	5.0	2.4	2.4	1.7	0.8	-0.38	-168.35	6162.05
20.0	84.0	5.0	2.5	2.5	1.8	0.7	-0.63	-167.58	6163.21
21.0	89.5	5.5	2.7	2.7	1.8	0.9	-0.88	-166.81	6164.63
22.0	95.0	5.5	2.3	2.3	1.9	1.0	-1.13	-166.04	6165.92
23.0	103.0	8.0	3.0	3.0	2.0	0.7	-1.38	-165.27	6169.29
24.0	111.0	8.0	3.4	3.4	2.1	0.4	-1.63	-164.50	6172.67
25.0	111.5	0.5	0.2	0.2	2.1	0..	-1.87	-163.73	6169.25
26.0	112.0	0.5	0.1	0.1	2.0	0.3	-2.12	-162.95	6165.26
27.0	112.5	0.5	0.2	0.2	2.0	00.3	-2.37	-162.18	6161.08
28.0	113.0	0.5	0.2	0.2	2.0	00.3	-2.61	-161.41	6156.70
29.0	113.2	0.1	0.0	0.0	2.0	00.2	-2.86	-160.64	6151.85
30.0	113.5	0.3	0.1	0.1	2.0	00.2	-3.10	-159.86	6146.86
31.0	114.7	1.1	0.5	0.5	2.0	00.2	-3.34	-159.09	6142.44
32.0	116.0	1.3	0.5	0.5	2.0	00.3	-3.59	-158.32	6137.92
33.0	118.5	2.5	1.1	1.1	2.0	0.7	-3.83	-157.54	6134.23
34.0	121.0	2.5	1.0	1.0	2.0	0.6	-4.07	-156.77	6130.36
35.0	124.0	3.0	1.3	1.3	1.9	0.7	-4.31	-155.99	6126.69
36.0	127.0	3.0	1.9	1.9	1.9	24.3	-4.55	-155.21	6122.77
37.0	130.0	3.0	2.2	2.2	1.9	22..	-4.79	-154.44	6118.50
38.0	133.0	3.0	2.2	2.2	1.9	20..	-5.02	-153.66	6113.91
39.0	135.0	2.0	1.4	1.4	1.9	18..	-5.26	-152.88	6108.17
40.0	137.0	2.0	1.4	1.4	1.9	16..	-5.49	-152.10	6102.15
41.0	139.5	2.5	1.7	1.7	1.9	13..	-5.73	-151.32	6096.28
42.0	142.0	2.5	1.6	1.6	1.9	10.4	-5.96	-150.54	6090.12

HOLE NUMBER = 66
LATITUDE IS 2.39 LONGITUDE IS -166.12 DEPTH IS 5293.00 BASEMENT AGE IS 95.00
DEPTH OF CRUST(PDEPH) IS 5800.19 DEPTH CORRECTION(DEPHC) IS -335.64 AVERAGE DENSITY(ADENS) IS 1.25

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	00..	2.39	-166.12	5293.00
1.0	4.0	4.0	1.5	1.5	1.5	00..	2.14	-165.35	5289.87
2.0	8.0	4.0	1.5	1.5	1.5	00..	1.89	-164.58	5286.66
4.0	17.0	0.6	1.7	0.2	0.7	00..	1.39	-163.04	5280.35
5.0	22.0	5.0	1.9	1.9	1.0	00..	1.15	-162.27	5277.22
6.0	27.0	5.0	1.9	1.9	1.2	00.7	0.90	-161.50	5273.81
7.0	32.0	5.0	1.8	1.8	1.3	00.2	0.66	-160.73	5270.10
8.0	37.0	5.0	2.1	2.1	1.4	00.0	0.41	-159.96	5266.09
9.0	45.0	8.0	3.7	3.7	1.8	00.0	0.17	-159.19	5264.36
10.0	53.0	8.0	3.6	3.6	2.1	00.2	-0.06	-158.42	5262.38
11.0	59.5	6.5	2.8	2.8	2.2	00.0	-0.30	-157.65	5258.78
12.0	66.0	6.5	2.8	2.8	2.2	00.0	-0.55	-156.88	5254.78
13.0	72.0	6.0	2.6	2.6	2.2	00.5	-0.79	-156.11	5250.00
14.0	78.0	6.0	2.7	2.7	2.3	00.0	-1.02	-155.34	5244.83
15.0	83.0	5.0	2.0	2.0	2.3	00.0	-1.26	-154.56	5238.41
16.0	88.0	5.0	2.1	2.1	2.3	00..	-1.50	-153.79	5231.59
17.0	94.0	6.0	2.8	2.8	2.3	00..	-1.73	-153.02	5225.23
18.0	100.0	6.0	2.7	2.7	2.3	00..	-1.97	-152.25	5218.48
19.0	106.0	6.0	2.7	2.7	2.3	00..	-2.20	-151.47	5211.34
20.0	112.0	6.0	2.7	2.7	2.4	00..	-2.44	-150.70	5203.79
21.0	117.0	5.0	2.2	2.2	2.4	00..	-2.67	-149.92	5194.97
22.0	122.0	5.0	2.2	2.2	2.3	00..	-2.90	-149.15	5185.64
23.0	127.0	5.0	2.2	2.2	2.3	00.4	-3.12	-148.37	5175.86
24.0	132.0	5.0	2.2	2.2	2.3	00..	-3.35	-147.60	5165.62
25.0	137.5	5.5	2.5	2.5	2.3	00..	-3.58	-146.82	5155.33
26.0	143.0	5.5	2.8	2.8	2.4	00..	-3.80	-146.04	5144.57
27.0	146.0	3.0	1.6	1.6	2.3	00..	-4.02	-145.26	5131.32
28.0	149.0	3.0	1.7	1.7	2.3	00..	-4.24	-144.48	5117.28
29.0	150.5	1.5	0.9	0.9	2.3	00..	-4.46	-143.70	5101.56
30.0	152.0	1.5	0.9	0.9	2.3	00..	-4.68	-142.92	5085.14
31.0	153.0	1.0	0.7	0.7	2.3	00..	-4.90	-142.14	5067.79
32.0	154.0	1.0	0.7	0.7	2.3	00..	-5.11	-141.36	5049.84
33.0	155.0	1.0	0.8	0.8	2.3	00..	-5.32	-140.58	5031.34
34.0	156.0	1.0	0.8	0.8	2.3	00..	-5.53	-139.80	5012.26
35.0	157.0	1.0	0.8	0.8	2.3	00..	-5.74	-139.01	4992.60
36.0	158.0	1.0	0.9	0.9	2.2	00..	-5.95	-138.23	4972.35
37.0	159.0	1.0	0.9	0.9	2.2	00..	-6.15	-137.44	4951.51
38.0	160.0	1.0	0.9	0.9	2.2	00..	-6.35	-136.65	4930.05
39.0	161.0	1.0	1.0	1.0	2.2	00..	-6.56	-135.87	4907.96
40.0	162.0	1.0	1.0	1.0	2.2	00..	-6.75	-135.08	4885.24
41.0	163.0	1.0	1.0	1.0	2.2	00..	-6.95	-134.29	4861.86
42.0	164.0	1.0	1.1	1.1	2.2	00..	-7.14	-133.50	4837.82

HOLE NUMBER = 68
LATITUDE IS 16.72 LONGITUDE IS -164.17 DEPTH IS 5467.00 BASEMENT AGE IS 100.00
DEPTH OF CRUST(PDEPH) IS 5829.92 DEPTH CORRECTION(DEPHC) IS -183.53 AVERAGE DENSITY(ADENS) IS 1.64

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	00.0	16.72	-164.17	5467.00
1.0	0.1	0.1	0.0	0.0	0.0	00.0	16.47	-163.41	5461.58
2.0	0.2	0.1	0.0	0.0	0.0	00.0	16.22	-162.65	5455.96
3.0	0.3	0.0	0.0	0.0	0.0	HHHH	15.98	-161.89	5450.11
4.0	0.3	0.0	0.0	0.0	0.0	HHHH	15.73	-161.14	5443.95
5.0	0.3	0.0	0.0	0.0	0.0	HHHH	15.49	-160.38	5437.52
6.0	0.3	0.0	0.0	0.0	0.0	HHHH	15.24	-159.63	5430.84
7.0	0.3	0.0	0.0	0.0	0.0	HHHH	15.00	-158.87	5423.90
8.0	0.3	0.0	0.0	0.0	0.0	HHHH	14.76	-158.12	5416.69
9.0	0.3	0.0	0.0	0.0	0.0	HHHH	14.51	-157.36	5409.20
10.0	0.3	0.0	0.0	0.0	0.0	HHHH	14.27	-156.61	5401.43
11.0	0.3	0.0	0.0	0.0	0.0	HHHH	14.03	-155.86	5393.37
12.0	0.3	0.0	0.0	0.0	0.0	HHHH	13.80	-155.11	5385.00
13.0	0.3	0.0	0.0	0.0	0.0	HHHH	13.56	-154.36	5376.33
14.0	0.3	0.0	0.0	0.0	0.0	HHHH	13.32	-153.61	5367.34
15.0	0.3	0.0	0.0	0.0	0.0	HHHH	13.09	-152.86	5358.03
16.0	0.3	0.0	0.0	0.0	0.0	HHHH	12.85	-152.11	5348.38
17.0	0.3	0.0	0.0	0.0	0.0	HHHH	12.62	-151.36	5338.38
18.0	0.3	0.0	0.0	0.0	0.0	HHHH	12.39	-150.61	5328.04
19.0	0.3	0.0	0.0	0.0	0.0	HHHH	12.16	-149.86	5317.34
20.0	0.3	0.0	0.0	0.0	0.0	HHHH	11.93	-149.11	5306.27
21.0	0.3	0.0	0.0	0.0	0.0	HHHH	11.70	-148.36	5294.82
22.0	0.3	0.0	0.0	0.0	0.0	HHHH	11.47	-147.61	5282.99
23.0	0.3	0.0	0.0	0.0	0.0	HHHH	11.25	-146.86	5270.75
24.0	0.3	0.0	0.0	0.0	0.0	HHHH	11.02	-146.11	5258.11
25.0	0.3	0.0	0.0	0.0	0.0	HHHH	10.80	-145.36	5245.06
26.0	0.3	0.0	0.0	0.0	0.0	HHHH	10.58	-144.62	5231.58
27.0	0.3	0.0	0.0	0.0	0.0	HHHH	10.36	-143.87	5217.67
28.0	0.3	0.0	0.0	0.0	0.0	HHHH	10.14	-143.12	5203.31
29.0	0.3	0.0	0.0	0.0	0.0	HHHH	9.92	-142.37	5188.50
30.0	0.3	0.0	0.0	0.0	0.0	HHHH	9.71	-141.62	5173.22
31.0	0.3	0.0	0.0	0.0	0.0	HHHH	9.50	-140.88	5157.47
32.0	0.3	0.0	0.0	0.0	0.0	HHHH	9.29	-140.13	5141.23
33.0	0.3	0.0	0.0	0.0	0.0	HHHH	9.08	-139.38	5124.49
34.0	0.3	0.0	0.0	0.0	0.0	HHHH	8.87	-138.63	5107.25
35.0	0.3	0.0	0.0	0.0	0.0	HHHH	8.66	-137.88	5089.49
36.0	0.3	0.0	0.0	0.0	0.0	HHHH	8.46	-137.13	5071.21
37.0	0.3	0.0	0.0	0.0	0.0	HHHH	8.26	-136.39	5052.38
38.0	0.3	0.0	0.0	0.0	0.0	HHHH	8.06	-135.64	5033.00
39.0	0.3	0.0	0.0	0.0	0.0	HHHH	7.86	-134.89	5013.06
40.0	0.3	0.0	0.0	0.0	0.0	HHHH	7.66	-134.14	4992.55
41.0	0.3	0.0	0.0	0.0	0.0	HHHH	7.47	-133.39	4971.46
42.0	0.3	0.0	0.0	0.0	0.0	HHHH	7.28	-132.64	4949.76

HOLE NUMBER = 69
LATITUDE IS 6.00 LONGITUDE IS -152.86 DEPTH IS 4978.00 BASEMENT AGE IS 87.00
DEPTH OF CRUST(PDEPH) IS 5738.99 DEPTH CORRECTION(DEPHC) IS -484.42 AVERAGE DENSITY(ADENS) IS 1.31

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	HH	6.00	-152.86	4978.00
1.0	0.0	0.0	0.0	0.0	0.0	HH	5.76	-152.09	4969.00
2.0	0.0	0.0	0.0	0.0	0.0	HH	5.53	-151.33	4959.69
3.0	0.0	0.0	0.0	0.0	0.0	HH	5.30	-150.57	4950.04
4.0	0.0	0.0	0.0	0.0	0.0	HH	5.06	-149.81	4940.05
5.0	0.0	0.0	0.0	0.0	0.0	HH	4.84	-149.05	4929.71
6.0	0.0	0.0	0.0	0.0	0.0	HH	4.61	-148.29	4919.00
7.0	0.0	0.0	0.0	0.0	0.0	HH	4.38	-147.52	4907.93
8.0	0.1	0.1	0.0	0.0	0.0	HH	4.16	-146.76	4896.57
9.0	4.0	3.9	1.8	1.8	1.8	10..	3.93	-146.00	4888.14
10.0	8.0	4.0	1.9	1.9	1.8	10..	3.71	-145.24	4879.57
11.0	12.2	4.2	2.0	2.0	1.9	10..	3.49	-144.47	4870.77
12.0	16.5	4.3	2.0	2.0	1.9	12.7	3.27	-143.71	4861.65
13.0	20.7	4.1	1.9	1.9	1.9	5.9	3.05	-142.95	4852.03
14.0	25.0	4.3	2.1	2.1	2.0	22.9	2.84	-142.18	4842.07
15.0	27.2	2.1	1.3	1.3	1.9	4.4	2.62	-141.42	4829.83
16.0	29.5	2.3	1.5	1.5	1.9	0.7	2.41	-140.65	4817.07
17.0	30.0	0.5	0.3	0.3	1.8	0.7	2.20	-139.89	4802.29
18.5	30.5	0.3	0.3	0.2	1.8	0.7	1.89	-138.74	4778.92
19.0	34.2	7.3	2.4	4.9	2.1	55.5	1.78	-138.36	4773.93
20.0	38.0	3.8	2.7	2.7	2.2	57..	1.58	-137.59	4760.56
21.0	46.8	8.7	7.2	7.2	3.1	59..	1.38	-136.83	4750.95
22.0	55.5	8.7	8.0	8.0	3.9	61..	1.17	-136.06	4740.68
23.0	63.5	8.0	7.7	7.7	4.4	63..	0.98	-135.29	4729.14
24.0	71.5	8.0	7.4	7.4	4.7	63.9	0.78	-134.52	4717.01
25.0	79.5	8.0	7.1	7.1	4.9	58.2	0.58	-133.75	4704.38
26.0	87.5	8.0	8.2	8.2	5.2	71.1	0.39	-132.99	4691.25
27.0	94.8	7.2	9.3	9.3	5.6	71.7	0.20	-132.22	4676.75
28.0	102.0	7.2	9.7	9.7	5.9	78.1	0.01	-131.45	4661.32
29.0	109.8	7.7	10.2	10.2	6.2	68.8	-0.16	-130.68	4645.73
30.0	117.5	7.7	9.5	9.5	6.4	61.2	-0.35	-129.90	4629.43
31.0	123.0	5.5	5.3	5.3	6.3	36.3	-0.53	-129.13	4610.71
32.0	128.5	5.5	5.3	5.3	6.3	45..	-0.71	-128.36	4591.76
33.0	134.5	6.0	6.4	6.4	6.3	54.3	-0.89	-127.59	4572.60
34.0	140.5	6.0	5.0	5.0	6.2	50.4	-1.06	-126.81	4552.68
35.0	145.8	5.2	3.4	3.4	6.1	56.4	-1.23	-126.04	4531.71
36.0	151.0	5.2	2.8	2.8	6.0	0.0	-1.40	-125.27	4510.13
37.0	155.5	4.5	1.6	1.6	5.9	0.0	-1.57	-124.49	4442.98
38.0	160.0	4.5	1.2	1.2	5.8	0.1	-1.73	-123.71	4414.62
39.0	161.2	1.1	0.4	0.4	5.7	0.0	-1.90	-122.94	4383.39
40.0	167.5	6.3	2.2	2.2	5.6	0..	-2.06	-122.16	4356.30
41.0	171.0	3.5	1.2	1.2	5.5	0..	-2.21	-121.38	4327.05
42.0	174.5	3.5	1.2	1.2	5.4	0..	-2.37	-120.61	4297.56

HOLE NUMBER = 70
LATITUDE IS 6.34 LONGITUDE IS -140.36 DEPTH IS 5059.00 BASEMENT AGE IS 60.00
DEPTH OF CRUST(PDEPH) IS 5355.22 DEPTH CORRECTION(DEPHC) IS -45.82 AVERAGE DENSITY(ADENS) IS 1.53

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	0.0	6.34	-140.36	5059.00
1.0	1.5	1.5	0.6	0.6	0.6	0.0	6.13	-139.60	5039.05
2.0	3.0	1.5	0.6	0.6	0.6	0.0	5.92	-138.84	5018.75
3.0	5.5	2.5	0.9	0.9	0.7	0.0	5.71	-138.09	4998.61
4.0	8.0	2.5	0.9	0.9	0.8	0.2	5.51	-137.33	4978.02
5.0	9.5	1.5	0.6	0.6	0.8	0.2	5.30	-136.58	4956.04
6.0	11.0	1.5	0.6	0.6	0.7	7..	5.10	-135.82	4933.24
7.0	13.0	2.0	0.9	0.9	0.8	14..	4.91	-135.06	4910.16
8.0	15.0	2.0	0.9	0.9	0.8	23..	4.71	-134.30	4886.49
9.0	17.0	2.0	1.0	1.0	0.8	23.0	4.51	-133.55	4862.12
10.0	19.0	2.0	0.9	0.9	0.8	0.2	4.32	-132.79	4792.70
11.0	23.0	4.0	2.6	2.6	1.1	51.1	4.13	-132.03	4763.47
12.0	27.0	4.0	2.9	2.9	1.4	49.5	3.94	-131.27	4734.39
13.0	32.0	5.0	4.0	4.0	1.8	54.2	3.76	-130.51	4705.97
14.0	37.0	5.0	3.7	3.7	2.1	61.2	3.58	-129.75	4677.56
15.0	41.0	4.0	2.1	2.1	2.1	24.3	3.39	-128.99	4648.40
16.0	45.0	4.0	2.0	2.0	2.1	32.9	3.22	-128.23	4619.21
17.0	48.5	3.5	3.3	3.3	2.1	32..	3.04	-127.47	4589.62
18.0	52.0	3.5	5.1	5.1	2.3	84.1	2.86	-126.71	4559.63
19.0	60.5	8.5	12.4	12.4	3.7	82.7	2.69	-125.95	4533.01
20.0	69.0	8.5	13.3	13.3	4.9	84.3	2.52	-125.19	4506.40
21.0	86.5	17.5	28.8	28.8	9.7	82.8	2.36	-124.43	4486.28
22.0	104.0	17.5	27.6	27.6	12.7	92.8	2.19	-123.66	4465.86
23.0	122.5	18.5	26.8	26.8	14.9	76.9	2.03	-122.90	4446.30
24.0	141.0	18.5	26.3	26.3	16.4	70.2	1.87	-122.14	4427.06
25.0	154.5	13.5	19.9	19.9	16.7	77.7	1.71	-121.37	4404.12
26.0	168.0	13.5	19.9	19.9	16.9	78.4	1.56	-120.61	4380.94
27.0	185.0	17.0	25.5	25.5	17.7	81.4	1.41	-119.84	4360.30
28.0	202.0	17.0	26.4	26.4	18.4	81.7	1.26	-119.08	4339.58
29.0	225.5	23.5	38.3	38.3	20.5	83.4	1.11	-118.31	4323.48
30.0	249.0	23.5	38.6	38.6	22.2	80.2	0.97	-117.54	4307.08
31.0	270.5	21.5	35.9	35.9	23.3	85.4	0.83	-116.78	4289.16
32.0	292.0	21.5	31.7	31.7	23.9	70.2	0.69	-116.01	4271.23
33.0	305.5	13.5	18.3	18.3	23.7	79.4	0.56	-115.24	4247.72
34.0	319.0	13.5	21.3	21.3	23.6	72.7	0.43	-114.47	4224.32
35.0	323.0	4.0	5.0	5.0	23.3	75..	0.30	-113.70	4191.20
36.0	327.0	4.0	5.0	5.0	23.1	77.6	0.17	-112.93	4164.69

HOLE NUMBER = 71
LATITUDE IS 4.47 LONGITUDE IS -140.31 DEPTH IS 4419.00 BASEMENT AGE IS 60.00
DEPTH OF CRUST(PDEPH) IS 5355.22 DEPTH CORRECTION(DEPHC) IS -531.56 AVERAGE DENSITY(ADENS) IS 1.71

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	67.4	4.47	-140.31	4419.00
1.0	3.0	3.0	3.0	3.0	3.0	67.4	4.26	-139.55	4399.97
2.0	6.0	3.0	3.0	3.0	3.0	62.8	4.05	-138.78	4380.76
3.0	10.5	4.5	4.5	4.5	3.6	60.0	3.84	-138.02	4361.98
4.0	15.0	4.5	4.5	4.5	3.9	64.2	3.64	-137.26	4342.80
5.0	21.0	6.0	6.0	6.0	4.5	62.9	3.43	-136.50	4324.00
6.0	26.5	5.5	5.5	5.5	4.7	58.6	3.23	-135.74	4304.44
7.0	33.7	7.1	7.6	7.6	5.3	60.4	3.04	-134.98	4285.31
8.0	41.0	7.3	8.3	8.3	5.8	77.9	2.84	-134.22	4265.77
9.0	51.7	10.6	14.1	14.1	7.5	82.5	2.65	-133.45	4247.76
10.0	62.5	10.8	14.5	14.5	8.7	72.2	2.45	-132.69	4184.88
11.0	79.7	17.2	23.3	23.3	11.9	77.1	2.26	-131.93	4164.98
12.0	97.0	17.3	26.8	26.8	14.6	61.8	2.08	-131.16	4145.65
13.0	142.5	45.5	79.0	79.0	35.1	86.1	1.89	-130.40	4144.61
14.0	186.0	43.5	80.1	80.1	45.6	82.2	1.71	-129.63	4142.62
15.0	214.0	28.0	48.6	48.6	46.0	81.1	1.53	-128.87	4129.53
16.0	242.0	28.0	46.4	46.4	46.1	80.4	1.35	-128.10	4116.46
17.0	252.5	10.5	18.9	18.9	44.9	86.4	1.17	-127.34	4092.21
18.0	263.0	10.5	20.0	20.0	43.9	87.4	1.00	-126.57	4066.61
19.0	273.0	10.0	18.6	18.6	43.0	88.9	0.83	-125.80	4040.45
20.0	283.0	10.0	18.6	18.6	42.2	89.2	0.66	-125.03	4014.29
21.0	302.0	19.0	37.2	37.2	41.8	88.4	0.49	-124.26	3993.92
22.0	321.0	19.0	38.9	38.9	41.7	83.5	0.33	-123.50	3973.54
23.0	351.7	30.6	63.3	63.3	43.6	82.2	0.17	-122.73	3960.41
24.0	382.5	30.8	63.5	63.5	45.2	89.4	0.01	-121.96	3947.32
25.0	401.2	18.6	39.3	39.3	44.9	87.1	-0.14	-121.19	3926.35
26.0	420.0	18.8	40.5	40.5	44.7	89.4	-0.29	-120.41	3905.21
27.0	446.0	26.0	55.3	55.3	45.3	86.9	-0.44	-119.64	3888.52
28.0	472.0	26.0	53.9	53.9	45.8	84.1	-0.59	-118.87	3871.84
29.0	491.5	19.5	40.4	40.4	45.6	82..	-0.73	-118.10	3851.10
30.0	511.0	19.5	40.4	40.4	45.4	80..	-0.88	-117.32	3830.26
31.0	523.0	12.0	25.0	25.0	44.9	78..	-1.02	-116.55	3804.55
32.0	536.0	13.0	27.3	27.3	44.5	76..	-1.15	-115.78	3779.35
33.0	544.0	8.0	16.8	16.8	44.1	74..	-1.29	-115.00	3750.88
34.0	552.0	8.0	16.9	16.9	43.7	72..	-1.42	-114.23	3722.33
35.0	555.5	3.5	7.4	7.4	43.5	70..	-1.55	-113.45	3688.62
36.0	559.0	3.5	7.4	7.4	43.2	68..	-1.67	-112.67	3661.20
37.0	560.0	1.0	2.1	2.1	43.2	66..	-1.80	-111.90	3626.68
38.0	562.0	2.0	4.3	4.3	43.0	64..	-1.91	-111.12	3588.46
39.0	564.5	2.5	5.4	5.4	42.8	62..	-2.03	-110.34	3547.33
40.0	567.0	2.5	5.4	5.4	42.7	60..	-2.14	-109.56	3503.88
41.0	568.0	1.0	2.1	2.1	42.6	58..	-2.26	-108.78	3457.93
42.0	569.0	1.0	2.1	2.1	42.5	56..	-2.36	-108.00	3411.03

HOLE NUMBER = 72
LATITUDE IS 0.44 LONGITUDE IS -138.87 DEPTH IS 4326.00 BASEMENT AGE IS 57.00
DEPTH OF CRUST(PDEPH) IS 5290.13 DEPTH CORRECTION(DFPHC) IS -722.58 AVERAGE DENSITY(ADENS) IS 1.67

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	82.5	0.44	-138.87	4326.00
1.0	11.0	11.0	14.2	14.2	14.2	81.0	0.23	-138.10	4310.67
2.0	22.0	11.0	14.6	14.6	14.4	80.0	0.02	-137.33	4295.90
3.0	35.0	13.0	17.6	17.6	15.6	79.8	-0.17	-136.55	4281.62
4.0	48.0	13.0	17.4	17.4	16.1	68.4	-0.37	-135.78	4266.76
5.0	55.5	7.5	10.0	10.0	15.3	82.1	-0.57	-135.01	4247.44
6.0	63.0	7.5	10.0	10.0	14.6	79.8	-0.76	-134.24	4227.03
7.0	75.0	12.0	16.1	16.1	14.9	75.4	-0.96	-133.47	4164.69
8.0	87.0	12.0	16.9	16.9	15.2	76..	-1.15	-132.69	4141.36
9.0	101.0	14.0	21.5	21.5	16.0	77..	-1.34	-131.92	4119.23
10.0	116.0	15.0	25.0	25.0	17.2	77.5	-1.53	-131.15	4097.58
11.0	133.0	17.0	29.7	29.7	18.8	79..	-1.71	-130.37	4076.98
12.0	150.0	17.0	29.9	29.9	20.1	81..	-1.89	-129.59	4056.19
13.0	171.0	21.0	37.0	37.0	22.1	84.1	-2.08	-128.82	4038.00
14.0	192.0	21.0	37.3	37.3	23.8	84..	-2.25	-128.04	4019.85
15.0	207.0	15.0	27.0	27.0	24.0	85..	-2.43	-127.26	3997.58
16.0	222.0	15.0	27.2	27.2	24.2	85..	-2.60	-126.49	3975.03
17.0	232.0	10.0	18.2	18.2	24.0	85..	-2.77	-125.71	3949.09
18.0	242.0	10.0	18.6	18.6	23.8	85..	-2.94	-124.93	3922.92
19.0	250.0	8.0	15.2	15.2	23.5	85..	-3.11	-124.15	3895.34
20.0	258.0	8.0	15.5	15.5	23.2	84..	-3.27	-123.37	3867.59
21.0	267.0	9.0	17.8	17.8	23.1	84..	-3.43	-122.58	3840.39
22.0	276.0	9.0	18.2	18.2	22.9	84.4	-3.59	-121.80	3813.11
23.0	284.0	8.0	16.5	16.5	22.7	85..	-3.75	-121.02	3785.08
24.0	292.0	8.0	16.7	16.7	22.5	86..	-3.90	-120.24	3756.93
25.0	301.0	9.0	19.0	19.0	22.4	87..	-4.05	-119.45	3729.34
26.0	310.0	9.0	19.2	19.2	22.3	88..	-4.20	-118.67	3701.68
27.0	317.5	7.5	16.3	16.3	22.2	89.2	-4.34	-117.88	3672.96
28.0	325.0	7.5	16.5	16.5	22.1	89.2	-4.48	-117.09	3644.17
29.0	328.0	3.0	6.7	6.7	21.9	87.1	-4.62	-116.31	3612.39
30.0	331.0	3.0	6.5	6.5	21.8	92.5	-4.76	-115.52	3580.62
31.0	333.0	2.0	4.0	4.0	21.7	89.4	-4.89	-114.73	3548.15
32.0	335.0	2.0	3.9	3.9	21.6	86.3	-5.02	-113.94	3513.47
33.0	336.0	1.0	1.9	1.9	21.5	89.6	-5.15	-113.15	3484.47
34.0	337.0	1.0	1.9	1.9	21.5	87.6	-5.27	-112.36	3449.95
35.0	338.0	1.0	1.9	1.9	21.4	76.3	-5.39	-111.57	3411.13
36.0	339.0	1.0	1.9	1.9	21.3	79.3	-5.51	-110.78	3369.08
37.0	340.0	1.0	2.0	2.0	21.3	62.2	-5.63	-109.99	3324.70
38.0	340.5	0.5	1.0	1.0	21.3	41.0	-5.74	-109.20	3278.44
39.0	341.2	0.6	1.4	1.4	21.2	36.4	-5.85	-108.40	3231.36

HOLE NUMBER = 73
LATITUDE IS -1.91 LONGITUDE IS -137.47 DEPTH IS 4387.00 BASEMENT AGE IS 54.00
DEPTH OF CRUST(PDEPH) IS 5219.47 DEPTH CORRECTION(DEPHC) IS -608.08 AVERAGE DENSITY(ADENS) IS 1.58

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	78.6	-1.91	-137.47	4387.00
1.0	12.5	12.5	15.5	15.5	15.5	78.6	-2.11	-136.69	4371.45
2.0	25.0	12.5	14.6	14.6	15.1	69.9	-2.31	-135.91	4355.80
3.0	31.5	6.5	7.0	7.0	13.4	75.0	-2.51	-135.14	4335.16
4.0	38.0	6.5	6.6	6.6	12.2	70.3	-2.70	-134.36	4269.21
5.0	42.5	4.5	4.5	4.5	11.4	71.1	-2.90	-133.58	4240.55
6.0	47.0	4.5	4.1	4.1	10.7	48.9	-3.09	-132.80	4211.66
7.0	51.0	4.0	3.2	3.2	10.1	49.9	-3.28	-132.02	4182.42
8.0	56.0	5.0	4.1	4.1	9.6	50.3	-3.47	-131.24	4153.66
9.0	60.5	4.5	3.7	3.7	9.1	54.3	-3.65	-130.46	4125.02
10.0	65.0	4.5	2.7	2.7	8.7	35.7	-3.84	-129.68	4096.07
11.0	72.0	7.0	4.5	4.5	8.3	29.4	-4.02	-128.90	4069.02
12.0	79.0	7.0	8.0	8.0	8.3	75.3	-4.20	-128.12	4042.29
13.0	81.0	2.0	2.7	2.7	8.1	78.9	-4.37	-127.33	4011.38
14.0	83.0	2.0	2.7	2.7	8.0	73.8	-4.55	-126.55	3979.90
15.0	87.5	4.5	6.6	6.6	7.9	83.5	-4.72	-125.76	3950.15
16.0	92.0	4.5	7.1	7.1	7.9	77.1	-4.89	-124.98	3920.41
17.0	102.0	10.0	15.9	15.9	8.7	78.6	-5.05	-124.19	3894.46
18.0	122.0	20.0	32.3	32.3	12.5	80..	-5.22	-123.40	3875.65
19.0	124.5	2.5	4.1	4.1	12.4	82..	-5.38	-122.61	3844.52
20.0	137.0	12.5	20.8	20.8	13.1	84..	-5.54	-121.82	3820.08
21.0	148.5	11.5	19.3	19.3	13.6	84.0	-5.69	-121.04	3794.99
22.0	160.0	11.5	19.5	19.5	14.0	84..	-5.84	-120.24	3769.81
23.0	172.0	12.0	20.6	20.6	14.5	84..	-5.99	-119.45	3744.91
24.0	185.0	13.0	22.9	22.9	15.1	85..	-6.14	-118.66	3720.61
25.0	195.5	10.5	18.7	18.7	15.3	86..	-6.29	-117.87	3694.43
26.0	206.0	10.5	18.9	18.9	15.5	86..	-6.43	-117.08	3668.17
27.0	214.0	8.0	14.8	14.8	15.4	86.7	-6.57	-116.28	3640.06
28.0	222.0	8.0	15.0	15.0	15.4	86..	-6.70	-115.49	3611.87
29.0	233.5	11.5	21.3	21.3	15.7	85..	-6.84	-114.69	3583.84
30.0	245.0	11.5	21.0	21.0	16.0	85.5	-6.97	-113.90	3562.14
31.0	255.0	10.0	18.0	18.0	16.0	84.4	-7.09	-113.10	3533.90
32.0	265.0	10.0	16.8	16.8	16.1	83.8	-7.22	-112.30	3501.43
33.0	273.0	8.0	13.8	13.8	16.0	82.7	-7.34	-111.50	3464.44
34.0	281.0	8.0	14.2	14.2	16.0	77.6	-7.46	-110.70	3425.11
35.0	286.5	5.5	9.2	9.2	15.8	72.6	-7.57	-109.90	3382.37
36.0	292.0	5.5	9.0	9.0	15.7	56.0	-7.68	-109.10	3338.81
37.0	296.0	4.0	5.7	5.7	15.6	17.2	-7.79	-108.30	3293.70
38.0	300.0	4.0	5.7	5.7	15.4	58.1	-7.90	-107.50	3248.51
39.0	301.5	1.5	2.3	2.3	15.4	70.2	-8.00	-106.70	3201.40

HOLE NUMBER = 74
LATITUDE IS -6.23 LONGITUDE IS -136.08 DEPTH IS 4431.00 BASEMENT AGE IS 50.00
DEPTH OF CRUST(PDEPH) IS 5071.66 DEPTH CORRECTION(DEPHC) IS -558.65 AVERAGE DENSITY(ADENS) IS 1.46

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	0.0	-6.23	-136.08	4431.00
1.0	0.0	0.0	0.0	0.0	0.0	0.0	-6.42	-135.29	4398.43
2.0	0.0	0.0	0.0	0.0	0.0	0.0	-6.62	-134.50	4365.81
3.0	0.0	0.0	0.0	0.0	0.0	0.0	-6.82	-133.71	4333.15
4.0	2.0	2.0	0.4	0.4	0.4	48.7	-7.01	-132.92	4302.02
5.0	6.0	4.0	0.8	0.8	0.7	0.1	-7.20	-132.13	4273.21
6.0	10.0	4.0	0.9	0.9	0.8	0..	-7.39	-131.34	4244.21
7.0	11.5	1.5	0.4	0.4	0.7	0..	-7.57	-130.55	4213.20
8.0	13.0	1.5	0.5	0.5	0.7	0..	-7.76	-129.75	4181.71
9.0	14.5	1.5	0.6	0.6	0.7	0..	-7.94	-128.96	4150.15
10.0	16.0	1.5	0.6	0.6	0.7	0..	-8.12	-128.16	4118.52
11.0	17.0	1.0	0.4	0.4	0.7	0..	-8.29	-127.37	4086.46
12.0	18.0	1.0	0.4	0.4	0.6	0..	-8.47	-126.57	4054.27
13.0	21.0	3.0	1.3	1.3	0.7	0..	-8.64	-125.77	4023.54
14.0	24.0	3.0	1.3	1.3	0.8	0.6	-8.81	-124.97	3993.06
15.0	26.0	2.0	1.1	1.1	0.8	75.5	-8.97	-124.18	3961.79
16.0	28.0	2.0	1.5	1.5	0.9	65.8	-9.14	-123.37	3930.28
17.0	28.2	0.1	0.2	0.2	0.9	0..	-9.30	-122.57	3897.31
18.0	28.5	0.3	0.4	0.4	0.9	0..	-9.45	-121.77	3864.12
19.0	30.0	1.5	2.2	2.2	0.9	76.8	-9.61	-120.97	3831.76
20.0	31.0	1.0	1.5	1.5	1.0	81.6	-9.76	-120.16	3798.98
21.0	33.0	2.0	3.1	3.1	1.1	83.6	-9.91	-119.36	3766.89
22.0	36.0	3.0	4.9	4.9	1.4	79.5	-10.06	-118.55	3735.49
23.0	41.0	5.0	7.7	7.7	2.2	81.3	-10.20	-117.74	3705.46
24.0	46.0	5.0	6.7	6.7	2.7	79.7	-10.35	-116.94	3675.43
25.0	52.0	6.0	8.8	8.8	3.4	77.9	-10.48	-116.13	3644.00
26.0	57.0	5.0	7.5	7.5	3.7	76.9	-10.62	-115.32	3618.11
27.0	63.0	6.0	8.1	8.1	4.2	72.6	-10.75	-114.51	3587.38
28.0	67.0	4.0	6.1	6.1	4.3	76.0	-10.88	-113.70	3551.03
29.0	74.5	7.5	12.9	12.9	5.1	80.1	-11.01	-112.88	3513.81
30.0	82.0	7.5	12.8	12.8	5.8	77.1	-11.13	-112.07	3474.13
31.0	87.5	5.5	9.2	9.2	6.0	80.0	-11.25	-111.26	3431.46
32.0	93.0	5.5	8.9	8.9	6.2	82.5	-11.37	-110.44	3387.90
33.0	97.0	4.0	6.1	6.1	6.2	80.2	-11.48	-109.63	3342.79
34.0	101.0	4.0	5.9	5.9	6.2	38.5	-11.59	-108.81	3297.56
35.0	101.1	0.0	0.1	0.1	6.2	38..	-11.70	-107.99	3249.41
36.0	101.2	0.1	0.1	0.1	6.2	38..	-11.80	-107.18	3201.22
37.0	101.3	0.0	0.1	0.1	6.2	38..	-11.90	-106.36	3152.83
38.0	101.4	0.1	0.1	0.1	6.2	38..	-12.00	-105.54	3103.95
39.0	101.5	0.1	0.1	0.1	6.2	38..	-12.10	-104.72	3054.11
40.0	101.6	0.0	0.1	0.1	6.2	38..	-12.19	-103.90	3002.70
41.0	101.7	0.1	0.1	0.1	6.2	38..	-12.27	-103.08	2948.94
42.0	101.8	0.0	0.1	0.1	6.1	38..	-12.36	-102.26	2891.93

HOLE NUMBER = 75
LATITUDE IS -12.51 LONGITUDE IS -134.67 DEPTH IS 4181.00 BASEMENT AGE IS 37.50
DEPTH OF CRUST(PDEPH) IS 4660.97 DEPTH CORRECTION(DEPHC) IS -419.33 AVERAGE DENSITY(ADENS) IS 1.60

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	HHHH	-12.51	-134.67	4181.00
1.0	0.0	0.0	0.0	0.0	0.0	HHHH	-12.70	-133.86	4147.80
2.0	0.0	0.0	0.0	0.0	0.0	HHHH	-12.89	-133.05	4114.56
3.0	0.0	0.0	0.0	0.0	0.0	HHHH	-13.08	-132.25	4081.26
4.0	0.0	0.0	0.0	0.0	0.0	HHHH	-13.27	-131.44	4047.91
5.0	0.0	0.0	0.0	0.0	0.0	HHHH	-13.46	-130.63	4014.52
6.0	0.0	0.0	0.0	0.0	0.0	HHHH	-13.64	-129.81	3981.07
7.0	0.0	0.0	0.0	0.0	0.0	HHHH	-13.82	-129.00	3947.57
8.0	0.0	0.0	0.0	0.0	0.0	HHHH	-14.00	-128.19	3914.03
9.0	0.0	0.0	0.0	0.0	0.0	HHHH	-14.18	-127.37	3880.43
10.0	0.0	0.0	0.0	0.0	0.0	HHHH	-14.35	-126.56	3846.78
11.0	0.0	0.0	0.0	0.0	0.0	HHHH	-14.52	-125.74	3813.08
12.0	0.0	0.0	0.0	0.0	0.0	HHHH	-14.69	-124.92	3779.33
13.0	0.0	0.0	0.0	0.0	0.0	HHHH	-14.86	-124.10	3746.15
14.0	3.0	3.0	2.5	2.5	2.5	32.2	-15.02	-123.28	3715.77
15.0	3.7	0.6	0.7	0.7	2.2	36.7	-15.18	-122.46	3680.02
16.0	4.5	0.8	1.1	1.1	2.0	75.3	-15.34	-121.64	3639.43
17.0	5.2	0.6	1.1	1.1	1.9	83.5	-15.49	-120.81	3595.98
18.0	7.0	1.8	2.9	2.9	2.1	85.3	-15.65	-119.98	3551.37
19.0	9.5	2.5	4.0	4.0	2.6	84..	-15.80	-119.16	3506.04
20.0	12.0	2.5	3.9	3.9	2.9	83.9	-15.94	-118.33	3460.04
21.0	21.7	9.6	15.9	15.9	8.7	84.6	-16.09	-117.50	3418.90
22.0	31.5	9.8	17.4	17.4	11.4	86.2	-16.23	-116.67	3377.75
23.0	35.2	3.6	6.7	6.7	10.9	85.4	-16.36	-115.84	3332.02
24.0	40.0	4.8	8.4	8.4	10.6	90.4	-16.50	-115.01	3287.06
25.0	45.0	5.0	8.6	8.6	10.4	83.0	-16.63	-114.17	3241.94
26.0	50.0	5.0	8.8	8.8	10.2	83.0	-16.76	-113.34	3196.13
27.0	53.5	3.5	5.9	5.9	9.9	82..	-16.88	-112.50	3147.96
28.0	57.0	3.5	5.8	5.8	9.7	81.8	-17.00	-111.66	3097.91
29.0	62.0	5.0	8.0	8.0	9.5	80.5	-17.12	-110.83	3046.20
30.0	67.0	5.0	7.7	7.7	9.4	78.4	-17.24	-109.99	2990.75
31.0	71.0	4.0	6.0	6.0	9.2	80..	-17.35	-109.15	2929.66
32.0	75.0	4.0	6.1	6.1	9.1	82.1	-17.46	-108.31	2862.35
33.0	79.5	4.5	7.4	7.4	9.0	72.9	-17.56	-107.46	2787.68
34.0	82.3	2.7	4.7	4.7	8.8	72..	-17.66	-106.62	2702.44
37.5	82.4	0.0	0.1	0.0	8.8	72..	-17.99	-103.66	2297.06

HOLE NUMBER = 77
LATITUDE IS 0.48 LONGITUDE IS -133.23 DEPTH IS 4291.00 BASEMENT AGE IS 41.00
DEPTH OF CRUST(PDEPH) IS 4776.75 DEPTH CORRECTION(DEPHC) IS -142.55 AVERAGE DENSITY(ADENS) IS 1.66

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	80.2	0.48	-133.23	4291.00
1.0	15.0	15.0	16.6	16.6	16.6	80.2	0.28	-132.46	4268.63
2.0	27.0	12.0	13.1	13.1	15.1	81.2	0.09	-131.69	4245.59
3.0	50.0	23.0	23.4	23.4	18.9	71.9	-0.08	-130.92	4229.97
4.0	64.0	14.0	13.3	13.3	17.7	74.7	-0.27	-130.14	4209.42
5.0	85.0	21.0	24.9	24.9	19.5	81.0	-0.45	-129.37	4192.73
6.0	101.0	16.0	24.4	24.4	20.2	88.2	-0.63	-128.60	4172.70
7.0	115.0	14.0	23.2	23.2	20.6	86.9	-0.81	-127.83	4149.87
8.0	138.0	23.0	35.7	35.7	23.1	83.3	-0.98	-127.06	4132.74
9.0	158.0	20.0	29.5	29.5	23.9	82.7	-1.16	-126.28	4114.19
10.0	186.0	28.0	40.5	40.5	26.4	75.5	-1.33	-125.51	4101.08
11.0	198.0	12.0	18.6	18.6	25.9	92.0	-1.49	-124.73	4077.84
12.0	208.0	10.0	17.3	17.3	25.5	86.6	-1.66	-123.96	4051.77
13.0	225.0	17.0	29.3	29.3	25.8	90.1	-1.82	-123.18	4029.86
14.0	230.0	5.0	8.6	8.6	25.4	92.6	-1.98	-122.40	4000.30
15.0	239.0	9.0	16.8	16.8	25.1	87.5	-2.14	-121.63	3972.76
16.0	249.0	10.0	18.5	18.5	24.8	83.2	-2.29	-120.85	3943.58
17.0	261.0	12.0	20.8	20.8	24.7	79.8	-2.45	-120.07	3922.11
18.0	269.0	8.0	15.4	15.4	24.4	90.3	-2.60	-119.29	3892.78
19.0	275.0	6.0	10.8	10.8	24.1	89.2	-2.74	-118.51	3857.36
20.0	282.0	7.0	12.2	12.2	23.8	93.0	-2.89	-117.73	3819.49
21.0	295.0	13.0	27.3	27.3	23.9	95.5	-3.03	-116.95	3783.28
22.0	322.0	27.0	58.1	58.1	26.8	94.3	-3.17	-116.17	3754.22
23.0	341.0	19.0	40.7	40.7	27.6	92.5	-3.30	-115.39	3716.77
24.0	354.0	13.0	28.0	28.0	27.6	93.0	-3.43	-114.60	3679.04
25.0	380.0	26.0	53.6	53.6	29.4	95.1	-3.56	-113.82	3647.68
26.0	385.0	5.0	10.0	10.0	29.1	95.4	-3.69	-113.04	3602.70
27.0	390.0	5.0	10.3	10.3	28.9	92.0	-3.81	-112.25	3557.74
28.0	401.0	11.0	23.4	23.4	28.7	95.0	-3.94	-111.47	3516.48
29.0	409.0	8.0	17.9	17.9	28.5	96.0	-4.05	-110.68	3472.65
30.0	416.0	7.0	15.7	15.7	28.3	95.5	-4.17	-109.89	3427.09
31.0	424.0	8.0	17.1	17.1	28.1	94.5	-4.28	-109.11	3380.66
32.0	432.0	8.0	16.5	16.5	27.9	86.6	-4.39	-108.32	3331.99
33.0	443.0	11.0	20.1	20.1	27.7	88.0	-4.49	-107.53	3282.16
34.0	458.0	15.0	28.2	28.2	27.7	92.7	-4.60	-106.74	3230.94
35.0	471.0	13.0	27.1	27.1	27.7	94.4	-4.70	-105.95	3172.72
36.0	483.0	12.0	25.2	25.2	27.6	30.7	-4.79	-105.16	3106.59

HOLE NUMBER = 75

LATITUDE IS 7.95 LONGITUDE IS -127.36 DEPTH IS 4363.00 BASEMENT AGE IS 35.00
DEPTH OF CRUST(PDEPH) IS 4577.89 DEPTH CORRECTION(DEPHC) IS 19.36 AVERAGE DENSITY(ADENS) IS 1.62

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.1	NA	NA	NA	NA	HHHH	7.95	-127.36	4363.00
1.0	0.1	0.0	0.0	0.0	0.0	HHHH	7.77	-126.61	4329.82
2.0	0.1	0.0	0.0	0.0	0.0	HHHH	7.60	-125.86	4296.45
3.0	0.1	0.0	0.0	0.0	0.0	HHHH	7.43	-125.12	4263.03
4.0	0.1	0.0	0.0	0.0	0.0	HHHH	7.26	-124.37	4229.55
5.0	0.1	0.0	0.0	0.0	0.0	HHHH	7.10	-123.63	4196.03
6.0	0.1	0.0	0.0	0.0	0.0	HHHH	6.94	-122.88	4162.46
7.0	0.1	0.0	0.0	0.0	0.0	HHHH	6.78	-122.13	4128.84
8.0	0.1	0.0	0.0	0.0	0.0	HHHH	6.62	-121.38	4095.16
9.0	0.1	0.0	0.0	0.0	0.0	HHHH	6.47	-120.64	4061.44
10.0	0.1	0.0	0.0	0.0	0.0	HHHH	6.32	-119.89	4025.43
11.0	0.1	0.0	0.0	0.0	0.0	HHHH	6.17	-119.14	3995.77
12.0	0.1	0.0	0.0	0.0	0.0	HHHH	6.02	-118.39	3960.58
12.5	1.0	1.8	1.2	2.4	2.1	81.7	5.95	-118.02	3941.96
13.0	2.0	2.0	1.3	2.6	2.4	85.5	5.88	-117.64	3922.81
14.0	10.0	8.0	10.8	10.8	9.1	83.2	5.74	-116.89	3885.96
15.0	20.0	10.0	13.5	13.5	11.3	78..	5.60	-116.14	3848.54
16.0	21.0	1.0	1.3	1.3	10.9	75..	5.46	-115.39	3803.12
17.0	42.0	21.0	25.7	25.7	18.3	70.6	5.33	-114.64	3770.87
18.0	51.0	9.0	9.8	9.8	16.8	76.1	5.20	-113.89	3730.75
19.0	60.0	9.0	9.9	9.9	15.8	77.3	5.07	-113.14	3689.86
20.0	70.0	10.0	11.3	11.3	15.1	83.6	4.95	-112.39	3649.62
21.0	110.0	40.0	54.8	54.8	29.6	91.0	4.83	-111.64	3630.71
22.0	138.0	28.0	43.5	43.5	32.4	87.8	4.71	-110.89	3604.19
23.0	143.0	5.0	8.0	8.0	31.5	89.2	4.59	-110.13	3559.83
24.0	174.0	31.0	51.4	51.4	35.1	88.9	4.48	-109.38	3531.54
25.0	199.0	25.0	41.1	41.1	35.8	88.7	4.37	-108.63	3498.11
26.0	201.0	2.0	3.4	3.4	35.5	88..	4.26	-107.88	3446.60
27.0	207.0	6.0	10.8	10.8	34.8	64..	4.16	-107.12	3393.64
28.0	217.0	10.0	19.0	19.0	34.1	67.6	4.06	-106.37	3339.09
29.0	225.0	8.0	15.1	15.1	33.4	95.7	3.96	-105.61	3277.56
30.0	239.0	14.0	25.9	25.9	32.9	92.2	3.87	-104.86	3213.14
31.0	255.0	16.0	30.0	30.0	32.8	95.2	3.77	-104.10	3141.70
32.0	271.0	16.0	30.7	30.7	32.6	89.6	3.69	-103.35	3060.05
33.0	287.0	16.0	31.3	31.3	32.6	89..	3.60	-102.59	2966.30
34.0	303.0	16.0	31.9	31.9	32.5	89..	3.52	-101.84	2858.46
35.0	321.0	18.0	35.9	35.9	32.7	89..	3.44	-101.08	2735.75

HOLE NUMBER = 79
LATITUDE IS 2.55 LONGITUDE IS -121.57 DEPTH IS 4566.00 BASEMENT AGE IS 24.10
DEPTH OF CRUST(PDEPH) IS 4213.75 DEPTH CORRECTION(DEPHC) IS 688.89 AVERAGE DENSITY(ADENS) IS 1.42

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	71.3	2.55	-121.57	4566.00
1.0	6.0	6.0	4.9	4.9	4.9	71.3	2.39	-120.80	4536.19
2.0	16.0	10.0	6.9	6.9	6.1	44.3	2.24	-120.04	4505.50
3.0	34.0	18.0	11.5	11.5	9.0	49..	2.09	-119.28	4478.37
4.0	53.0	19.0	13.6	13.6	10.6	54..	1.94	-118.51	4450.31
5.0	71.0	18.0	13.6	13.6	11.4	59.6	1.80	-117.75	4419.65
6.0	90.0	19.0	14.6	14.6	12.1	60.8	1.66	-116.99	4388.62
7.0	108.0	18.0	14.8	14.8	12.5	65..	1.52	-116.22	4356.28
8.0	126.0	18.0	17.6	17.6	13.2	70..	1.38	-115.46	4323.51
9.0	142.0	16.0	18.1	18.1	13.8	74.9	1.25	-114.69	4288.67
10.0	162.0	20.0	20.1	20.1	14.6	53.1	1.12	-113.93	4256.49
11.0	176.0	14.0	12.0	12.0	14.4	60..	0.99	-113.16	4219.89
12.0	191.0	15.0	9.6	9.6	14.0	67..	0.87	-112.39	4183.69
13.0	250.0	59.0	46.2	46.2	21.6	72.6	0.75	-111.63	4181.31
14.0	287.0	37.0	48.3	48.3	25.0	85.4	0.63	-110.86	4162.89
15.0	310.0	23.0	31.8	31.8	25.5	78..	0.51	-110.09	4127.55
16.0	338.0	28.0	38.0	38.0	26.6	69.1	0.40	-109.32	4091.93
17.0	359.0	21.0	30.7	30.7	26.8	78.6	0.29	-108.55	4047.15
18.0	378.0	19.0	32.7	32.7	27.1	90.0	0.18	-107.78	3994.86
19.0	386.0	8.0	15.8	15.8	26.9	75.5	0.08	-107.01	3927.53
20.0	399.0	13.0	25.6	25.6	26.8	89.6	-0.01	-106.24	3854.81
21.0	408.0	9.0	16.2	16.2	26.6	92.5	-0.11	-105.47	3769.41
22.0	413.0	5.0	9.9	9.9	26.4	92.5	-0.20	-104.70	3669.57

HOLE NUMBER = 80
LATITUDE IS -0.96 LONGITUDE IS -121.55 DEPTH IS 4399.00 BASEMENT AGE IS 22.50
DEPTH OF CRUST(PDEPH) IS 4156.05 DEPTH CORRECTION(DEPHC) IS 398.33 AVERAGE DENSITY(ADENS) IS 1.50

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	81.8	-0.96	-121.55	4399.00
1.0	12.0	12.0	9.8	9.8	9.8	81.5	-1.11	-120.77	4367.13
2.0	29.0	17.0	13.9	13.9	12.2	71..	-1.26	-120.00	4337.29
3.0	41.0	12.0	9.8	9.8	11.5	61.1	-1.41	-119.22	4302.04
4.0	41.1	0.0	0.0	0.0	11.5	HHHH	-1.56	-118.45	4256.12
4.5	41.2	0.1	0.0	0.1	11.5	HHHH	-1.63	-118.06	4232.35
5.0	51.0	19.6	8.0	16.1	12.4	61.1	-1.70	-117.67	4215.83
6.0	62.0	11.0	9.4	9.4	11.8	65..	-1.84	-116.89	4176.96
7.0	68.0	6.0	5.7	5.7	11.3	69.7	-1.98	-116.12	4134.31
8.0	72.0	4.0	4.0	4.0	10.9	60.3	-2.12	-115.34	4089.60
9.0	74.0	2.0	2.0	2.0	10.7	61..	-2.25	-114.56	4043.09
10.0	80.0	6.0	6.5	6.5	10.3	63..	-2.38	-113.78	3999.02
11.0	82.0	2.0	2.2	2.2	10.1	65..	-2.50	-113.00	3951.60
12.0	87.0	5.0	5.9	5.9	9.9	67..	-2.63	-112.22	3904.80
13.0	93.0	6.0	7.4	7.4	9.7	69.4	-2.75	-111.44	3856.96
14.0	102.0	9.0	12.1	12.1	9.9	74..	-2.87	-110.66	3808.52
15.0	118.0	16.0	23.8	23.8	11.8	79..	-2.98	-109.88	3761.37
16.0	133.0	15.0	23.7	23.7	13.2	84.1	-3.09	-109.09	3708.52
17.0	148.0	15.0	23.5	23.5	14.2	80.0	-3.20	-108.31	3649.19
18.0	158.0	10.0	16.3	16.3	14.3	86.7	-3.31	-107.53	3578.66
19.0	162.0	4.0	7.0	7.0	14.1	89..	-3.41	-106.74	3494.43
20.0	170.0	8.0	14.4	14.4	14.2	92.3	-3.51	-105.96	3401.70
21.0	184.0	14.0	25.6	25.6	15.0	70..	-3.60	-105.18	3300.12
22.0	199.0	15.0	27.8	27.8	16.0	60.0	-3.70	-104.39	3184.15
22.5	199.1	0.1	0.1	0.3	16.0	YYYY	-3.74	-104.00	3114.72

HOLE NUMBER = 82
LATITUDE IS 2.59 LONGITUDE IS -106.94 DEPTH IS 3689.00 BASEMENT AGE IS 7.00
DEPTH OF CRUST(PDEPH) IS 3390.05 DEPTH CORRECTION(DEPHC) IS 480.61 AVERAGE DENSITY(ADENS) IS 1.42

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	79.4	2.59	-106.94	3689.00
1.0	18.0	18.0	15.9	15.9	15.9	79..	2.49	-106.17	3636.68
2.0	40.0	22.0	18.3	18.3	17.3	73.1	2.39	-105.41	3581.24
3.0	62.0	22.0	18.6	18.6	17.7	75..	2.29	-104.65	3517.61
4.0	78.0	16.0	16.0	16.0	17.4	77.4	2.20	-103.89	3438.94
5.0	100.0	22.0	24.7	24.7	19.0	73..	2.12	-103.13	3352.39
6.0	186.0	86.0	103.3	103.3	58.0	70..	2.03	-102.37	3302.36
7.0	214.0	28.0	35.8	35.8	55.1	70.1	1.95	-101.61	3189.98
7.1	223.0	90.0	12.3	123.4	57.8	70..	1.94	-101.53	3182.56

HOLE NUMBER =159
LATITUDE IS 12.33 LONGITUDE IS -122.29 DEPTH IS 4484.00 BASEMENT AGE IS 24.00
DEPTH OF CRUST(PDEPH) IS 4210.52 DEPTH CORRECTION(DEPHC) IS 365.18 AVERAGE DENSITY(ADENS) IS 1.34

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	HHHH	12.33	-122.29	4484.00
1.0	0.0	0.0	0.0	0.0	0.0	HHHH	12.17	-121.56	4448.81
1.2	0.0	0.0	0.0	0.0	0.0	HHHH	12.14	-121.41	4441.22
1.7	9.0	18.0	6.4	12.9	12.9	14..	12.06	-121.05	4429.18
2.0	9.1	0.3	0.0	0.2	12.7	14..	12.01	-120.83	4419.81
3.0	9.5	0.4	0.2	0.2	12.2	14..	11.86	-120.10	4377.42
4.0	9.8	0.2	0.2	0.2	11.8	14..	11.71	-119.37	4332.65
5.0	10.1	0.2	0.2	0.2	11.5	14..	11.56	-118.64	4286.32
6.0	10.8	0.7	0.5	0.5	10.8	14..	11.42	-117.91	4239.37
7.0	11.4	0.6	0.4	0.4	10.2	14..	11.28	-117.19	4191.88
8.0	12.0	0.6	0.4	0.4	9.7	14..	11.14	-116.46	4144.21
9.0	14.5	2.5	1.7	1.7	8.4	14..	11.00	-115.73	4098.05
10.0	17.0	2.5	1.7	1.7	7.4	14..	10.87	-115.00	4051.97
11.0	19.0	2.0	1.4	1.4	6.8	14.0	10.74	-114.27	4005.30
12.0	22.0	3.0	2.1	2.1	6.1	5.0	10.61	-113.54	3958.91
13.0	24.3	2.2	1.7	1.7	5.7	5.0	10.48	-112.81	3911.05
14.0	27.0	2.7	2.0	2.0	5.3	10.0	10.36	-112.08	3861.88
15.0	30.8	3.7	2.9	2.9	5.0	10.0	10.24	-111.35	3811.29
16.0	34.0	3.2	2.5	2.5	4.8	10.0	10.12	-110.62	3757.00
17.0	39.0	5.0	3.9	3.9	4.7	27.0	10.01	-109.89	3699.78
17.9	46.0	7.7	5.3	5.9	4.9	31.0	9.91	-109.23	3645.69
18.0	47.0	9.9	0.8	8.3	4.9	31.0	9.89	-109.15	3640.00
19.0	60.0	13.0	11.7	11.7	6.4	54..	9.79	-108.42	3576.39
20.0	73.0	13.0	14.7	14.7	7.9	72.0	9.68	-107.69	3504.81
21.0	90.0	17.0	23.3	23.3	10.8	72.0	9.58	-106.96	3425.62
22.0	100.0	10.0	14.3	14.3	11.1	72..	9.48	-106.23	3328.73
23.0	106.9	6.8	10.7	10.7	11.1	33.0	9.38	-105.50	3215.37
23.1	107.0	1.0	0.1	1.6	11.1	BSLT	9.37	-105.42	3202.74
24.0	108.1	1.2	1.7	1.9	11.0	BSLT	9.28	-104.76	3081.57

HOLE NUMBER =160
LATITUDE IS 11.72 LONGITUDE IS -130.88 DEPTH IS 4940.00 BASEMENT AGE IS 34.80
DEPTH OF CRUST(PDEPH) IS 4571.23 DEPTH CORRECTION(DEPHC) IS 455.10 AVERAGE DENSITY(ADENS) IS 1.55

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	2.0	11.72	-130.88	4940.00
1.0	9.0	9.0	6.7	6.7	6.7	0.2	11.53	-130.14	4913.48
2.0	9.2	0.1	0.1	0.1	6.5	0.2	11.35	-129.40	4881.30
3.0	9.5	0.3	0.2	0.2	6.3	0.2	11.17	-128.67	4848.12
4.0	9.7	0.1	0.1	0.1	6.2	0.1	10.99	-127.93	4814.82
5.0	10.1	0.3	0.2	0.2	5.9	0.2	10.81	-127.20	4781.61
6.0	10.5	0.4	0.2	0.2	5.7	0.2	10.64	-126.46	4748.38
7.0	11.0	0.5	0.3	0.3	5.5	0.4	10.47	-125.72	4715.17
8.0	11.5	0.5	0.3	0.3	5.3	0.4	10.30	-124.99	4681.92
9.0	11.8	0.2	0.2	0.2	5.1	0.4	10.14	-124.25	4648.48
10.0	12.5	0.7	0.5	0.5	4.9	0.6	9.97	-123.51	4614.36
11.0	13.0	0.5	0.3	0.3	4.7	0.6	9.81	-122.78	4583.95
12.0	14.0	1.0	0.7	0.7	4.4	0.1	9.65	-122.04	4548.61
13.0	14.7	0.6	0.5	0.5	4.2	0.1	9.49	-121.30	4509.04
14.0	16.0	1.3	0.9	0.9	4.0	0.3	9.34	-120.56	4466.84
15.0	17.4	1.3	1.0	1.0	3.7	0.4	9.19	-119.83	4422.65
16.0	19.0	1.6	1.1	1.1	3.5	1.0	9.04	-119.09	4377.19
17.0	20.4	1.3	1.0	1.0	3.3	0.4	8.89	-118.35	4330.77
18.0	23.2	2.7	2.2	2.2	3.2	2.5	8.75	-117.61	4284.94
19.0	28.3	5.1	4.7	4.7	3.5	0.1	8.61	-116.87	4240.80
20.0	32.0	3.7	3.6	3.6	3.5	66.2	8.47	-116.13	4195.81
21.0	35.8	3.7	4.1	4.1	3.6	72.6	8.34	-115.40	4150.66
22.0	38.0	2.2	2.7	2.7	3.5	57.5	8.20	-114.66	4104.07
23.0	42.0	4.0	5.2	5.2	3.7	71.1	8.07	-113.92	4057.97
23.2	43.0	5.0	1.3	6.8	3.7	72.2	8.05	-113.77	4049.02
24.0	46.0	3.7	4.3	5.3	3.8	77.5	7.95	-113.18	4010.95
25.0	53.3	7.2	11.1	11.1	4.8	77.3	7.82	-112.44	3964.35
26.0	57.0	3.7	5.7	5.7	4.9	86.7	7.70	-111.70	3912.83
27.0	61.0	4.0	6.3	6.3	5.0	88.5	7.58	-110.95	3857.90
28.0	67.0	6.0	10.2	10.2	5.5	90.5	7.47	-110.21	3799.77
29.0	75.8	8.7	15.9	15.9	6.7	90.3	7.35	-109.47	3737.70
30.0	84.0	8.2	14.9	14.9	7.5	87.9	7.24	-108.73	3667.90
31.0	91.1	7.0	13.2	13.2	7.9	89.8	7.14	-107.99	3588.53
32.0	97.0	5.9	11.5	11.5	8.1	90.2	7.03	-107.25	3497.77
33.0	101.5	4.5	8.4	8.4	8.2	88.7	6.93	-106.50	3393.60
34.0	109.0	7.5	13.7	13.7	8.5	86.1	6.83	-105.76	3277.16
34.8	114.0	6.2	9.4	11.8	8.7	BSLT	6.75	-105.17	3171.50

HOLE NUMBER =161
LATITUDE IS 10.24 LONGITUDE IS -139.95 DEPTH IS 4939.00 BASEMENT AGE IS 46.00
DEPTH OF CRUST(PDEPH) IS 4941.09 DEPTH CORRECTION(DEPHC) IS 180.30 AVERAGE DENSITY(ADENS) IS 1.58

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	73.7	10.24	-139.95	4939.00
1.0	2.0	2.0	2.0	2.0	2.0	73.7	10.03	-139.20	4907.72
2.0	2.0	0.0	0.0	0.0	2.0	73.7	9.82	-138.45	4875.06
3.0	2.0	0.0	0.0	0.0	2.0	73.7	9.61	-137.71	4842.20
4.0	2.0	0.0	0.0	0.0	2.0	HHHH	9.41	-136.96	4809.28
5.0	2.0	0.0	0.0	0.0	2.0	HHHH	9.21	-136.22	4776.31
6.0	2.0	0.0	0.0	0.0	2.0	HHHH	9.01	-135.47	4743.29
7.0	2.0	0.0	0.0	0.0	2.0	HHHH	8.81	-134.72	4710.22
9.0	2.0	0.0	0.0	0.0	2.0	HHHH	8.42	-133.23	4643.93
10.0	2.0	0.0	0.0	0.0	2.0	HHHH	8.23	-132.48	4610.71
11.0	2.0	0.0	0.0	0.0	2.0	HHHH	8.04	-131.74	4577.44
12.0	2.0	0.0	0.0	0.0	2.0	HHHH	7.86	-130.99	4544.12
13.0	2.0	0.0	0.0	0.0	2.0	HHHH	7.67	-130.24	4510.75
14.0	2.0	0.0	0.0	0.0	2.0	HHHH	7.49	-129.49	4477.33
15.0	2.0	0.0	0.0	0.0	2.0	HHHH	7.31	-128.75	4443.86
16.0	2.0	0.0	0.0	0.0	2.0	HHHH	7.13	-128.00	4410.33
17.0	2.0	0.0	0.0	0.0	2.0	HHHH	6.95	-127.25	4376.76
18.0	2.0	0.0	0.0	0.0	2.0	HHHH	6.78	-126.50	4343.14
19.0	2.0	0.0	0.0	0.0	2.0	HHHH	6.61	-125.75	4309.46
20.0	2.0	0.0	0.0	0.0	2.0	HHHH	6.44	-125.00	4275.74
21.0	2.0	0.0	0.0	0.0	2.0	HHHH	6.27	-124.25	4239.73
22.0	2.0	0.0	0.0	0.0	2.0	HHHH	6.11	-123.50	4210.07
23.0	12.8	10.8	17.3	17.3	14.9	73.7	5.95	-122.75	4182.93
24.0	27.0	14.2	21.3	21.3	18.3	67.0	5.79	-122.00	4157.44
25.0	43.7	16.7	23.3	23.3	20.2	63.9	5.63	-121.25	4127.14
26.0	55.8	12.1	16.9	16.9	19.5	73.9	5.48	-120.50	4091.50
27.0	64.8	8.9	13.1	13.1	18.6	81.6	5.33	-119.75	4051.89
28.0	81.0	16.2	26.0	26.0	20.1	87.0	5.18	-119.00	4016.32
29.0	90.0	9.0	16.2	16.2	19.7	90.3	5.03	-118.25	3974.93
30.0	105.0	15.0	29.1	29.1	21.0	91.3	4.89	-117.49	3937.35
31.0	112.5	7.5	14.2	14.2	20.6	90.9	4.75	-116.74	3893.85
32.0	128.0	15.5	29.7	29.7	21.7	94.9	4.61	-115.99	3856.55
33.0	147.0	19.0	38.2	38.2	23.8	89.8	4.48	-115.23	3821.28
34.0	168.5	21.5	40.1	40.1	25.9	83.5	4.35	-114.48	3787.07
35.0	186.0	17.5	30.1	30.1	26.3	85.1	4.22	-113.73	3749.24
36.0	191.0	5.0	8.4	8.4	25.8	70..	4.09	-112.97	3700.67
37.0	195.2	4.1	7.0	7.0	25.4	65.3	3.97	-112.22	3649.82
38.0	200.5	5.3	9.2	9.2	25.0	78.9	3.85	-111.46	3596.66
39.0	206.0	5.5	8.8	8.8	24.6	6.3	3.73	-110.71	3539.20
40.0	211.0	5.0	5.6	5.6	24.1	17.6	3.61	-109.95	3475.88
41.0	217.0	6.0	5.4	5.4	23.6	16.4	3.50	-109.19	3406.83
42.0	223.0	6.0	5.2	5.2	23.1	6.8	3.39	-108.44	3329.48

HOLE NUMBER =162
LATITUDE IS 14.88 LONGITUDE IS -144.04 DEPTH IS 4854.00 BASEMENT AGE IS 53.00
DEPTH OF CRUST(PDEPH) IS 5194.62 DEPTH CORRECTION(DEPHC) IS -204.27 AVERAGE DENSITY(ADENS) IS 1.25

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	HHHH	14.88	-144.04	4854.00
1.0	0.0	0.0	0.0	0.0	0.0	HHHH	14.66	-143.30	4828.48
2.0	0.0	0.0	0.0	0.0	0.0	HHHH	14.44	-142.56	4802.28
3.0	0.0	0.0	0.0	0.0	0.0	HHHH	14.23	-141.82	4731.04
4.0	0.0	0.0	0.0	0.0	0.0	HHHH	14.01	-141.08	4698.47
5.0	0.0	0.0	0.0	0.0	0.0	HHHH	13.80	-140.35	4665.66
6.0	0.0	0.0	0.0	0.0	0.0	HHHH	13.59	-139.61	4633.19
7.0	0.0	0.0	0.0	0.0	0.0	HHHH	13.38	-138.87	4600.47
8.0	0.0	0.0	0.0	0.0	0.0	HHHH	13.18	-138.14	4567.70
9.0	0.0	0.0	0.0	0.0	0.0	HHHH	12.97	-137.40	4534.89
10.0	0.0	0.0	0.0	0.0	0.0	HHHH	12.77	-136.66	4502.02
11.0	0.0	0.0	0.0	0.0	0.0	HHHH	12.57	-135.93	4469.10
12.0	0.0	0.0	0.0	0.0	0.0	HHHH	12.37	-135.19	4436.13
13.0	0.0	0.0	0.0	0.0	0.0	HHHH	12.17	-134.45	4403.12
14.0	0.0	0.0	0.0	0.0	0.0	HHHH	11.98	-133.72	4370.05
15.0	0.0	0.0	0.0	0.0	0.0	HHHH	11.79	-132.98	4336.93
16.0	0.0	0.0	0.0	0.0	0.0	HHHH	11.59	-132.24	4303.76
17.0	0.0	0.0	0.0	0.0	0.0	HHHH	11.41	-131.51	4270.54
18.0	0.0	0.0	0.0	0.0	0.0	HHHH	11.22	-130.77	4237.26
19.0	0.0	0.0	0.0	0.0	0.0	HHHH	11.04	-130.03	4203.94
20.0	0.0	0.0	0.0	0.0	0.0	HHHH	10.85	-129.29	4170.57
21.0	0.0	0.0	0.0	0.0	0.0	HHHH	10.67	-128.56	4137.15
22.0	0.0	0.0	0.0	0.0	0.0	HHHH	10.50	-127.82	4103.60
23.0	0.0	0.0	0.0	0.0	0.0	HHHH	10.32	-127.08	4070.16
24.0	0.0	0.0	0.0	0.0	0.0	HHHH	10.15	-126.34	4036.58
25.0	0.0	0.0	0.0	0.0	0.0	HHHH	9.98	-125.61	4002.96
26.0	0.0	0.0	0.0	0.0	0.0	HHHH	9.81	-124.87	3969.29
27.0	0.0	0.0	0.0	0.0	0.0	HHHH	9.64	-124.13	3935.56
28.0	0.0	0.0	0.0	0.0	0.0	HHHH	9.48	-123.39	3899.56
29.0	0.0	0.0	0.0	0.0	0.0	HHHH	9.32	-122.65	3869.69
30.0	0.0	0.0	0.0	0.0	0.0	HHHH	9.16	-121.91	3834.71
31.0	0.0	0.0	0.0	0.0	0.0	77.7	9.00	-121.18	3795.22
32.0	8.0	8.0	9.0	9.0	9.0	77.7	8.85	-120.44	3759.62
33.0	11.2	3.1	3.9	3.9	7.6	66.9	8.70	-119.70	3719.24
34.0	18.0	6.8	8.8	8.8	8.0	79.4	8.55	-118.96	3678.36
35.0	22.2	4.1	5.3	5.3	7.5	59.7	8.41	-118.22	3633.80
36.0	27.0	4.8	5.0	5.0	7.1	54.9	8.26	-117.48	3589.69
37.0	32.0	5.0	3.4	3.4	6.5	23.4	8.12	-116.74	3545.62
38.0	36.0	4.0	2.0	2.0	6.0	5.0	7.98	-116.00	3500.91
39.0	39.3	3.2	1.6	1.6	5.6	7.0	7.85	-115.25	3455.05
40.0	43.0	3.7	1.5	1.5	5.3	5.0	7.72	-114.51	3410.57
41.0	45.0	2.0	0.8	0.8	5.1	5.4	7.59	-113.77	3363.52
42.0	49.0	4.0	1.9	1.9	4.8	0.8	7.46	-113.03	3317.24

HOLE NUMBER =164

LATITUDE IS 11.25 LONGITUDE IS -150.29 DEPTH IS 5230.00 BASEMENT AGE IS 76.00
DEPTH OF CRUST(PDEPH) IS 5620.78 DEPTH CORRECTION(DEPHC) IS -168.35 AVERAGE DENSITY(ADENS) IS 1.49

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	HHHH	11.25	-150.29	5230.00
1.0	1.0	1.0	0.2	0.2	0.2	HHHH	11.01	-149.53	5217.73
2.0	1.0	0.0	0.0	0.0	0.2	HHHH	10.79	-148.78	5204.42
3.0	1.0	0.0	0.0	0.0	0.2	HHHH	10.56	-148.03	5190.50
4.0	1.0	0.0	0.0	0.0	0.2	HHHH	10.33	-147.28	5176.14
5.0	1.0	0.0	0.0	0.0	0.2	HHHH	10.11	-146.53	5161.33
6.0	1.0	0.0	0.0	0.0	0.2	HHHH	9.88	-145.78	5146.05
7.0	1.0	0.0	0.0	0.0	0.2	HHHH	9.66	-145.03	5130.30
8.0	1.0	0.0	0.0	0.0	0.2	HHHH	9.44	-144.28	5114.06
9.0	1.0	0.0	0.0	0.0	0.2	HHHH	9.22	-143.53	5097.33
10.0	1.0	0.0	0.0	0.0	0.2	HHHH	9.01	-142.78	5080.09
11.0	1.0	0.0	0.0	0.0	0.2	HHHH	8.79	-142.03	5062.33
12.0	1.0	0.0	0.0	0.0	0.2	HHHH	8.58	-141.28	5044.04
13.0	1.0	0.0	0.0	0.0	0.2	HHHH	8.36	-140.53	5025.21
14.0	1.0	0.0	0.0	0.0	0.2	HHHH	8.15	-139.78	5005.84
15.0	1.0	0.0	0.0	0.0	0.2	HHHH	7.95	-139.03	4985.90
16.0	1.0	0.0	0.0	0.0	0.2	HHHH	7.74	-138.28	4965.39
17.0	1.0	0.0	0.0	0.0	0.2	HHHH	7.53	-137.52	4944.29
18.0	1.0	0.0	0.0	0.0	0.2	HHHH	7.33	-136.77	4922.60
19.0	1.0	0.0	0.0	0.0	0.2	HHHH	7.13	-136.02	4900.30
20.0	1.0	0.0	0.0	0.0	0.2	HHHH	6.93	-135.27	4877.38
21.0	1.0	0.0	0.0	0.0	0.2	HHHH	6.73	-134.52	4853.83
22.0	1.0	0.0	0.0	0.0	0.2	HHHH	6.54	-133.77	4829.64
23.0	1.0	0.0	0.0	0.0	0.2	HHHH	6.35	-133.01	4804.79
24.0	1.0	0.0	0.0	0.0	0.2	HHHH	6.16	-132.26	4779.27
25.0	1.0	0.0	0.0	0.0	0.2	HHHH	5.97	-131.51	4753.08
26.0	1.0	0.0	0.0	0.0	0.2	HHHH	5.78	-130.76	4681.83
27.0	1.5	0.5	0.2	0.2	0.2	.2	5.60	-130.00	4649.65
28.0	4.0	2.5	1.1	1.1	0.7	00.0	5.41	-129.25	4619.19
29.0	10.0	6.0	2.8	2.8	2.0	00.0	5.24	-128.49	4591.56
30.0	13.5	3.5	1.6	1.6	1.9	00.0	5.06	-127.74	4562.40
31.0	17.2	3.6	1.7	1.7	1.8	1.0	4.88	-126.99	4533.00
32.0	19.5	2.3	1.1	1.1	1.8	00.8	4.71	-126.23	4502.48
33.0	21.3	1.7	0.8	0.8	1.7	00.3	4.54	-125.47	4471.34
34.0	23.0	1.7	0.8	0.8	1.6	00.4	4.37	-124.72	4439.99
35.0	24.2	1.1	0.5	0.5	1.6	00.2	4.21	-123.96	4408.19
36.0	25.5	1.3	0.6	0.6	1.5	1..	4.04	-123.21	4376.35
37.0	27.0	1.5	0.8	0.8	1.5	1.8	3.88	-122.45	4344.62
38.0	28.5	1.5	0.8	0.8	1.4	00.0	3.73	-121.69	4312.86
39.0	32.0	3.5	2.1	2.1	1.5	00.2	3.57	-120.93	4282.57
40.0	34.0	2.0	1.2	1.2	1.5	00.2	3.42	-120.18	4251.34
42.0	40.5	3.2	4.2	2.1	1.6	00.0	3.12	-118.66	4189.98

HOLE NUMBER =164
LATITUDE IS 13.20 LONGITUDE IS -161.66 DEPTH IS 5485.00 BASEMENT AGE IS 115.00
DEPTH OF CRUST(PDEPH) IS 5889.42 DEPTH CORRECTION(DEPHC) IS -183.64 AVERAGE DENSITY(ADENS) IS 1.38

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	..	13.20	-161.66	5485.00
1.0	0.6	0.6	0.1	0.1	0.1	..	12.95	-160.90	5482.65
2.0	1.3	0.7	0.2	0.2	0.2	..	12.71	-160.14	5480.31
3.0	2.5	1.2	0.3	0.3	0.2	..	12.46	-159.38	5478.26
4.0	3.6	1.1	0.3	0.3	0.3	..	12.22	-158.62	5476.04
5.0	4.7	1.1	0.3	0.3	0.3	..	11.98	-157.87	5473.65
6.0	5.7	1.0	0.3	0.3	0.3	..	11.74	-157.11	5471.02
7.0	6.7	1.0	0.3	0.3	0.3	..	11.50	-156.35	5468.22
8.0	7.7	1.0	0.3	0.3	0.3	..	11.26	-155.60	5465.25
9.0	8.6	0.8	0.2	0.2	0.3	..	11.02	-154.84	5462.03
10.0	9.5	0.9	0.2	0.2	0.3	..	10.78	-154.09	5458.61
11.0	10.8	1.2	0.4	0.4	0.3	..	10.54	-153.33	5455.34
12.0	12.2	1.3	0.4	0.4	0.3	..	10.31	-152.58	5452.00
13.0	13.2	1.0	0.3	0.3	0.3	..	10.08	-151.83	5448.14
14.0	14.3	1.1	0.3	0.3	0.3	..	9.84	-151.07	5444.12
15.0	15.5	1.2	0.3	0.3	0.3	..	9.61	-150.32	5439.98
16.0	16.7	1.1	0.3	0.3	0.3	..	9.38	-149.56	5435.63
17.0	17.9	1.2	0.3	0.3	0.3	..	9.15	-148.81	5431.05
18.0	19.1	1.2	0.3	0.3	0.3	..	8.92	-148.06	5426.25
19.0	20.2	1.0	0.3	0.3	0.3	..	8.70	-147.30	5421.12
20.0	21.3	1.1	0.3	0.3	0.3	..	8.47	-146.55	5415.73
21.0	23.6	2.2	0.7	0.7	0.3	..	8.25	-145.79	5411.07
22.0	24.2	0.5	0.1	0.1	0.3	..	8.03	-145.04	5404.90
23.0	24.8	0.6	0.2	0.2	0.3	..	7.81	-144.29	5398.26
24.0	25.4	0.5	0.2	0.2	0.3	..	7.59	-143.53	5391.35
25.0	26.6	1.2	0.4	0.4	0.3	..	7.37	-142.78	5384.62
26.0	27.8	1.2	0.4	0.4	0.3	..	7.16	-142.02	5377.68
27.0	28.9	1.0	0.3	0.3	0.3	..	6.94	-141.27	5370.36
28.0	30.0	1.1	0.3	0.3	0.3	..	6.73	-140.52	5362.72
29.0	31.0	1.0	0.3	0.3	0.3	..	6.52	-139.76	5354.68
30.0	32.1	1.0	0.3	0.3	0.3	..	6.31	-139.01	5346.38
31.0	33.2	1.0	0.3	0.3	0.3	..	6.10	-138.25	5337.77
32.0	34.3	1.0	0.3	0.3	0.3	..	5.90	-137.50	5328.81
33.0	35.2	0.9	0.3	0.3	0.3	..	5.70	-136.74	5319.34
34.0	36.0	0.8	0.3	0.3	0.3	..	5.50	-135.99	5309.39
35.0	37.0	1.0	0.3	0.3	0.3	..	5.30	-135.23	5299.24
36.0	38.0	1.0	0.3	0.3	0.3	..	5.10	-134.47	5288.72
37.0	39.0	1.0	0.3	0.3	0.3	..	4.91	-133.72	5277.82
38.0	40.0	1.0	0.4	0.4	0.3	..	4.71	-132.96	5266.52
39.0	41.2	1.1	0.4	0.4	0.3	..	4.52	-132.20	5254.97
40.0	42.5	1.3	0.5	0.5	0.3	..	4.33	-131.44	5243.12
41.0	43.7	1.1	0.5	0.5	0.3	..	4.15	-130.69	5230.76
42.0	44.7	1.0	0.4	0.4	0.3	..	3.96	-129.93	5217.80

HOLE NUMBER =166
LATITUDE IS 3.76 LONGITUDE IS -175.08 DEPTH IS 4950.00 BASEMENT AGE IS 120.00
DEPTH OF CRUST(PDEPH) IS 5901.81 DEPTH CORRECTION(DEPHC) IS -686.89 AVERAGE DENSITY(ADENS) IS 1.31

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	.4	3.76	-175.08	4950.00
1.0	1.2	1.2	0.2	0.2	0.2	.4	3.50	-174.30	4948.79
2.0	2.5	1.3	0.3	0.3	0.3	1..	3.25	-173.53	4947.66
3.0	4.2	1.7	0.4	0.4	0.3	1.9	3.00	-172.76	4946.78
4.0	5.8	1.5	0.3	0.3	0.3	.8	2.75	-171.99	4945.73
5.0	7.2	1.4	0.3	0.3	0.3	1.4	2.50	-171.22	4944.36
6.0	8.7	1.4	0.4	0.4	0.3	1..	2.25	-170.45	4942.94
7.0	11.4	2.7	0.8	0.8	0.4	1.3	2.00	-169.68	4942.41
8.0	14.0	2.6	0.7	0.7	0.5	1.3	1.75	-168.91	4941.76
9.0	18.4	4.3	1.3	1.3	0.7	2.0	1.50	-168.14	4942.49
10.0	22.9	4.5	1.4	1.4	0.8	3.2	1.26	-167.37	4943.31
11.0	27.4	4.5	1.5	1.5	0.9	7.9	1.01	-166.60	4943.97
12.0	32.0	4.6	1.6	1.6	1.0	22.4	0.76	-165.83	4944.54
13.0	35.1	3.0	1.0	1.0	1.0	11.8	0.51	-165.06	4943.66
14.0	38.3	3.1	1.1	1.1	1.0	11..	0.26	-164.29	4942.57
15.0	42.5	4.2	1.4	1.4	1.1	10..	0.01	-163.52	4942.15
16.0	46.7	4.1	1.4	1.4	1.1	10..	-0.22	-162.75	4941.64
17.0	50.3	3.5	1.1	1.1	1.1	9..	-0.47	-161.98	4940.43
18.0	53.9	3.5	1.1	1.1	1.1	9..	-0.71	-161.21	4938.98
19.0	58.0	4.1	1.2	1.2	1.1	8..	-0.96	-160.44	4937.74
20.0	62.2	4.1	1.2	1.2	1.1	6..	-1.20	-159.67	4936.44
21.0	66.1	3.8	1.1	1.1	1.1	5.9	-1.45	-158.90	4934.68
22.0	70.0	3.9	1.1	1.1	1.1	14.6	-1.69	-158.13	4932.66
23.0	74.0	4.0	1.5	1.5	1.1	17.2	-1.93	-157.35	4930.49
24.0	78.0	4.0	1.7	1.7	1.2	13..	-2.17	-156.58	4928.05
25.0	82.8	4.7	1.8	1.8	1.2	9..	-2.41	-155.81	4925.99
26.0	87.6	4.8	1.6	1.6	1.2	4.4	-2.65	-155.03	4923.77
27.0	91.8	4.1	1.3	1.3	1.2	0.1	-2.89	-154.26	4920.83
28.0	96.0	4.2	1.3	1.3	1.2	0..	-3.12	-153.48	4917.58
29.0	101.8	5.7	1.9	1.9	1.3	00..	-3.36	-152.71	4915.36
30.0	107.6	5.8	2.0	2.0	1.3	00.1	-3.59	-151.93	4913.03
31.0	114.6	7.0	2.1	2.1	1.4	2.6	-3.82	-151.16	4911.38
32.0	121.7	7.1	2.1	2.1	1.4	4..	-4.06	-150.38	4909.70
33.0	127.9	6.1	2.4	2.4	1.4	6.6	-4.29	-149.60	4906.99
34.0	132.2	4.2	1.8	1.8	1.5	6.0	-4.52	-148.82	4902.22
35.0	137.5	5.3	2.2	2.2	1.5	5..	-4.74	-148.05	4897.68
36.0	142.8	5.2	2.1	2.1	1.5	4..	-4.97	-147.27	4892.93
37.0	147.7	4.8	1.9	1.9	1.5	3..	-5.19	-146.49	4887.53
38.0	152.6	4.8	1.7	1.7	1.5	2..	-5.42	-145.71	4881.74
39.0	157.4	4.8	1.6	1.6	1.5	1..	-5.64	-144.92	4875.52
40.0	162.2	4.7	1.5	1.5	1.5	00.0	-5.86	-144.14	4868.95
41.0	167.6	5.3	1.6	1.6	1.5	00.4	-6.08	-143.36	4862.47
42.0	173.0	5.4	2.2	2.2	1.6	.2	-6.29	-142.57	4855.70

HOLE NUMBER =168
LATITUDE IS 10.66 LONGITUDE IS 173.55 DEPTH IS 5420.00 BASEMENT AGE IS 110.00
DEPTH OF CRUST(PDEPH) IS 5873.76 DEPTH CORRECTION(DEPHC) IS -257.01 AVERAGE DENSITY(ADENS) IS 1.46

AGE OF POINT	DEPTH IN HOLE	UNCORC RATE	COR INTERVAL	COR RATE	CUM COR RATE	LITHOLOGY	PRESL LAT	PRES LONG	WATER DEPTH
0.0	0.0	NA	NA	NA	NA	..	10.66	173.55	5420.00
0.1	0.6	6.0	0.1	1.8	1.8	..	10.63	173.62	5420.12
2.0	1.2	0.3	0.1	0.0	0.9	..	10.17	175.11	5413.72
3.0	1.7	0.5	0.1	0.1	0.7	..	9.92	175.89	5410.30
4.0	2.2	0.5	0.1	0.1	0.5	..	9.68	176.66	5406.68
5.0	2.3	0.0	0.0	0.0	0.5	..	9.43	177.44	5402.57
6.0	2.5	0.2	0.0	0.0	0.5	..	9.18	178.22	5398.30
7.0	3.2	0.6	0.2	0.2	0.4	..	8.93	178.99	5394.24
8.0	4.0	0.8	0.2	0.2	0.4	..	8.69	179.77	5390.14
9.0	5.0	1.0	0.3	0.3	0.3	..	8.44	-179.45	5386.00
10.0	6.0	1.0	0.3	0.3	0.3	..	8.19	-178.67	5381.68
11.0	6.7	0.6	0.2	0.2	0.3	..	7.94	-177.90	5376.90
12.0	7.5	0.8	0.2	0.2	0.3	..	7.69	-177.12	5371.94
13.0	8.5	1.0	0.3	0.3	0.3	..	7.44	-176.35	5366.91
14.0	9.5	1.0	0.3	0.3	0.3	..	7.19	-175.58	5361.68
15.0	10.0	0.5	0.1	0.1	0.3	..	6.94	-174.81	5355.80
16.0	10.5	0.5	0.1	0.1	0.3	..	6.69	-174.04	5349.59
17.0	11.2	0.6	0.2	0.2	0.3	..	6.44	-173.27	5343.28
18.0	12.0	0.8	0.2	0.2	0.3	..	6.19	-172.50	5336.81
19.0	12.6	0.5	0.1	0.1	0.3	..	5.94	-171.73	5329.91
20.0	13.2	0.6	0.1	0.1	0.3	..	5.69	-170.96	5322.71
21.0	14.4	1.2	0.3	0.3	0.3	..	5.44	-170.19	5315.68
22.0	15.5	1.1	0.3	0.3	0.3	..	5.19	-169.42	5308.37
23.0	17.2	1.6	0.5	0.5	0.3	..	4.94	-168.65	5301.21
24.0	19.0	1.8	0.5	0.5	0.3	..	4.69	-167.88	5293.90
25.0	20.5	1.5	0.4	0.4	0.3	..	4.44	-167.11	5286.05
26.0	22.0	1.5	0.4	0.4	0.3	..	4.19	-166.34	5277.81
27.0	24.0	2.0	0.6	0.6	0.4	..	3.94	-165.58	5269.62
28.0	26.0	2.0	0.6	0.6	0.4	..	3.70	-164.81	5261.17
29.0	27.5	1.5	0.5	0.5	0.4	..	3.45	-164.04	5251.95
30.0	29.0	1.5	0.5	0.5	0.4	..	3.20	-163.27	5242.29
31.0	30.5	1.5	0.5	0.5	0.4	..	2.95	-162.50	5232.25
32.0	32.0	1.5	0.5	0.5	0.4	..	2.71	-161.74	5221.82
33.0	33.5	1.5	0.5	0.5	0.4	..	2.46	-160.97	5210.99
34.0	35.0	1.5	0.5	0.5	0.4	..	2.22	-160.20	5199.76
35.0	37.0	2.0	0.8	0.8	0.4	..	1.98	-159.43	5188.49
36.0	39.0	2.0	0.8	0.8	0.4	..	1.73	-158.66	5176.87
37.0	41.0	2.0	0.9	0.9	0.5	..	1.49	-157.89	5164.81
38.0	43.0	2.0	1.4	1.4	0.5	..	1.25	-157.13	5152.28
39.0	45.5	2.5	2.2	2.2	0.6	..	1.01	-156.36	5139.61
40.0	48.0	2.5	2.2	2.2	0.7	..	0.77	-155.59	5126.45
41.0	50.5	2.5	2.2	2.2	0.8	..	0.53	-154.82	5112.81
42.0	53.0	2.5	2.2	2.2	0.8	..	0.29	-154.05	5098.69

APPENDIX II

Program ESP

by

J. L. Matthews

and

R. Johnson

PROGRAM ESP

Software and Hardware

Fortran IV, Burroughs 6700

Preparation

Each of the grids plotted by program ROPH must be contoured, then encoded into arrays for use by Program ESP. The data is entered in two (40 x 40 x 1) arrays as variable ALITH (percent carbonate) and ATHIC (adjusted rate of sedimentation). The numbers entered in each array record the value at the midpoint of the latitude and of the depth-of-water intervals, Figure 2.1.

Purpose

Program ESP predicts thickness and kind of sediment that may be expected at arbitrarily specified points on the east-central portion of the Pacific plate. The prediction is accomplished by incremental counterclockwise rotation of the point back through time, using the latitude and depth of water as the independent variables. Rate of sedimentation and carbonate percent, the dependent variables, are entered in separate (40 x 40 x 1) arrays, with latitudes and depth of water as the coordinates. At each iteration, these grids are entered, and the extracted values used to predict thickness of sediment and percent of carbonate of the sedimentary column.

Variables

ROPHT = an array that contains interval thicknesses corrected for compaction determined by program ROPH for each DSDP site; the interval (XINC) for ROPH and ESP must agree.

ROPHC = an array that contains carbonate percentages entered in program ROPH for each DSDP site; the interval (XINC) for ROPH and ESP must agree.

CARRY(I) = an array that contains the digitized curve describing variation of sedimentation rate with time (Fig. 11); the dimension is 17; values are entered at 2.5 million-year intervals, starting with 0 my.

CCARY(I) = an array that contains the digitized curve describing the variation of carbonate percentages with time (Fig. 10); the dimension is 17; values are entered at 2.5 million-year intervals, starting with 0 my.

IMONY = An option for supressing the printing of the carbonate array (ALITH) and the rate of sedimentation array (ATHIC); if set to 1, arrays do not print; if set to 0, printing occurs.

IAGE5 = An option for supressing printing of iterative solutions; set equal 1 or greater, solutions will be printed every IAGE5 years.

TESTA = Maximum age (mybp) attained at the base of the modeled sedimentary sequence. If, for instance, the basement age is 110 my, but solutions for the past 37 my are desired, TESTA = 37.0 will stop execution at this time for all sites.

TESTB = Duration (my) for which IB = 1. In its present form, the program uses 1 set of 2 latitude-depth-of-water arrays. With alteration of the Dimension, Read, and Write statements for arrays ATHIC and ALITH, a second set of 2 arrays (IB = 2) could be entered to reflect a different sedimentation pattern.

LL = The number of points for which a stratigraphic section is required.

XINC = The length (my) of the incremented rotations.

BLAD1 = Latitude of first pole of rotation (Hawaiian) entered as decimal fraction of degrees. Use north projection only with positive sign.

BLAD2 = Latitude of second pole (Emperor). Same convention as BLAD1.

BLOD1 = Longitude of first pole, entered as decimal fraction of degrees. Use positive values for east longitude, negative values for west longitude.

BLOD2 = Longitude of second pole. Same convention as BLOD1.

TEST1 = Age (mybp) for change from Hawaiian to Emperor pole. For ages greater than TEST1, RATE1 applies.

TEST2 = Age (mybp) for change from RATE3 to RATE2.

TEST3 = Age (mybp) for change from RATE4 to RATE3.

RATE1 = Rate of rotation (my/deg) for Emperor pole.

RATE2 = Rate of rotation (my/deg) from age TEST1 to TEST2 years.

RATE3 = Rate of rotation (my/deg) from age TEST2 to TEST3 years.

RATE4 = Rate of rotation (my/deg) from age 0 to TEST3 years.

ALITH(ID, IC,IB) = Percent of carbonate entered in latitude-depth-of-water grid.

ATHIC(ID, IC,IB) = Adjusted sedimentation rate entered in latitude-depth-of-water grid .

CLAD1 = Latitude in decimal fraction of degrees for point selected for prediction of stratigraphic section; positive for north latitude, negative for south.

CLOD1 = Longitude in decimal fraction of degrees for point selected for prediction of stratigraphic section; same convention as BLOD1.

AGEB = Age (mybp) of basement at latitude CLAD1, longitude CLOD1.

DEPH = Depth of water (m) at point CLAD1, CLOD1.

NSITE = Starting points may be given designators of 5 integer length.

Out

CLAD = Latitude (convention same as CLAD1) of point after incremental rotation.

ACLOD = Longitude of point after incremental rotation (convention same as CLOD1.

AGET = Age (mybp) of points after incremental rotation.

PDEPH = Depth of sea floor (m) at point CLAD, ACLOD.

XLITH = Percentage of carbonate at point CLAD, ACLOD.

CACO3 = Cumulative weighted mean carbonate percent.

XTHIC = Uncompacted thickness (m) predicted for each increment.

CINT = Thickness (m) for each increment after correction for compaction.

COMPA = Cumulative adjusted thickness of sediment.

ID = Subscript for depth in variable ALITH and ATHIC.

IC = Subscript for latitude in variable ALITH and ATHIC.

IB = Subscript signifying grid number. Ordinarily IB will be 1, unless program is altered.

VEL = Velocity of sediment, determined from thickness of sediment.

ROPHT = Same as input.

ROPHA = Three-point average of ROPHT.

TDIFF = Difference in interval thickness (uncompacted or corrected) between ESP and ROPH.

PDIFF = Percent difference in thickness between ESP and ROPH. This also appears in output table as "Error in uncompacted interval thickness."

ROPHC = Same as input.

ROPHB = Three-point average of ROPHC.

CDIFF = Difference in interval carbonate between ESP and ROPH.

PCDIF = Percent difference in interval carbonate between ESP and ROPH. This also appears in output table as "Error in interval carbonate."

Subroutines

ROCCW, COUNT, CRUST, TABLE, CPRIM, XLOOK, and functions FTAN and XTAN

Features

Two poles of rotation may be used. Uses one set of 2 arrays for rate of sedimentation and percent of carbonate, but can be altered to include a second set. Includes a routine for interpolating values from arrays ALITH and ATHIC.

Input of Data

Image Number	Variables	Format
1	BLAD1, BLOD1, BLAD2, BLOD2	4 F10.2
2	TESTA, TESTB, XINC	3 F10.2
3	TEST1, TEST2, TEST3, RATE1, RATE2, RATE3, RATE4	3 F10.2, 4 F10.1

Image Number	Variables	Format
4	LL	I10
5	IMONY, IAGES	2I2
6	CARRY	20F4.2
7	CCARY	20F4.2
8	ALITH	10F8.1
9	ATHIC	10(F3.1, 1X)
10	CLAD1, CLOD1, AGEB, DEPH, NSITE	3F10.2, 20X, F10.2, 1X, I5
11	ROPHT	20(F3.1, 1X)
12	ROPHC	26(F2.0, 1X)

Method

Step 1. Read and print images 1 through 9 of the Input-of-Data list.

The cards (images 1 through 9) read in here are common to all sites. In addition to reading and printing, this step includes an interpolative routine that reduces the effort in card punching required to translate sedimentation rates (determined from the curves of Figure 8) to the elements of array ATHIC. Rather than punch a value for each element of ATHIC, a 40 x 40 x 1 array, the user need only enter selected elements along each row of the array, and the routine will interpolate between entries. The sample output (Appendix II) shows an example. The values punched on cards are printed under the heading "Array of sedimentation rates before interpolation." The array used in the computations after interpolation appears under the heading "Array of sedimentation rates." Interpolation is linear and proceeds horizontally across the rows of the array. As an example, consider Row 1 of the sample output. A sedimentation rate of 7.0 m/my appears in Column 1, zeros in Columns 2 through 7 and a rate of 10.0 m/my in Column 8. The interpolative routine calculates rates for Columns

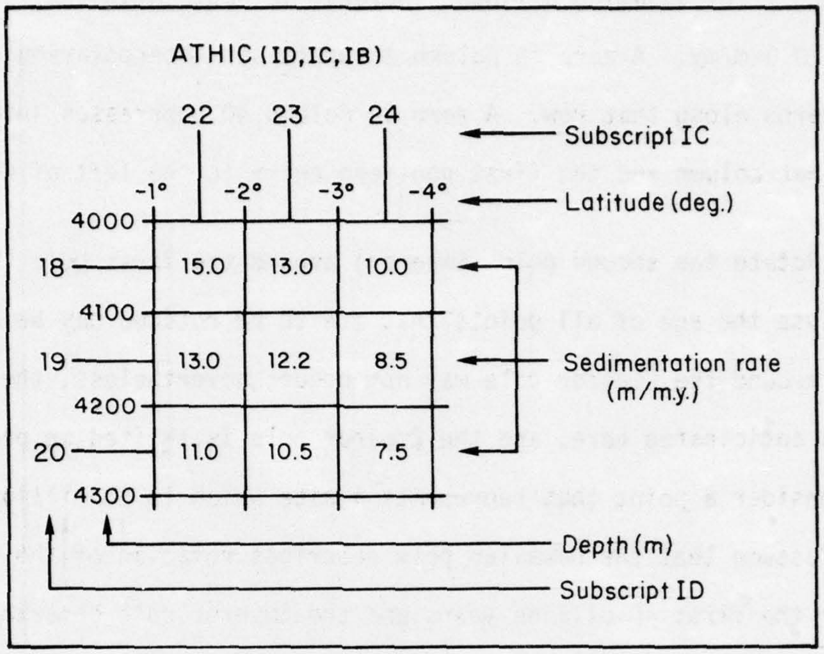

Figure 2.1. A portion of array ATHIC (ID, IC, IB) showing position of values for rate of sedimentation relative to depth and latitude boundaries.

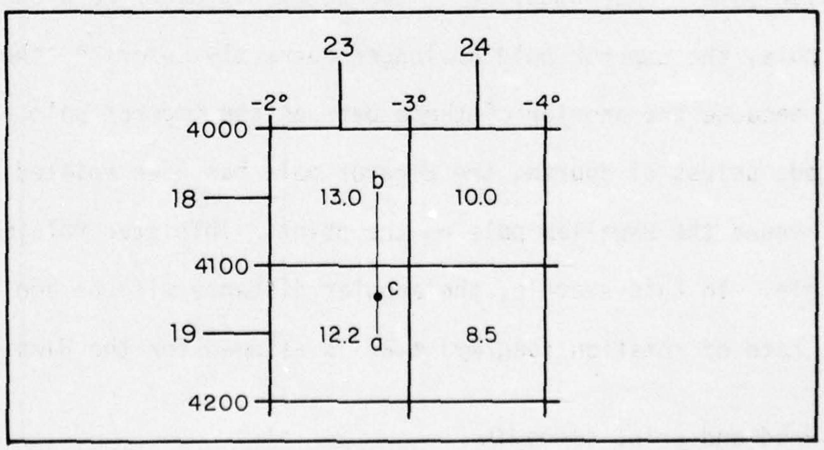

Figure 2.2. An enlarged portion of Figure 2.1, showing interpolating procedure -- interpolate between 13.0 and 10.0 to get point b; interpolate between 12.2 and 8.5 to get point a; interpolate between a and b to get rate of sedimentation, point

2 through 7 by assuming a linear increase in sedimentation rate between 7.0 and 10.0 m/my. A zero in Column 1 suppresses interpolation for all leading zeros along that row. A zero in Column 40 suppresses interpolation between that column and the first non-zero entry to the left of Column 40.

Step 2. Rotate the second pole (Emperor) around the first pole (Hawaiian).

Because the age of all points that are to be rotated may be too young, rotation around the Emperor pole may not occur; nevertheless, the possibility is anticipated here, and the Emperor pole is shifted in preparation. Consider a point that represents a site which is 50 million years old, and assume that the Hawaiian pole describes rotation of the Pacific plate for the first 40 million years and the Emperor pole describes it for the next 10 million years. The point must first be rotated around the Hawaiian and then around the Emperor pole. The Emperor pole, as its coordinates are generally given, describes the angular distance of the point from the Emperor pole, assuming that no rotation has occurred around the Hawaiian pole. Once rotation of the point has occurred around the Hawaiian pole, the Emperor pole no longer correctly describes the relationship, because the angular distance between the Emperor pole and point are changed, unless of course, the Emperor pole has been rotated the same distance around the Hawaiian pole as the point. This step rotates the Emperor pole. In this example, the angular distance will be age (40 my) times the rate of rotation (deg/my) that is assumed for the Hawaiian pole.

Step 3. Read and print image 10.

This card specifies the latitude and longitude of the starting point, the age of the basement of the point, depth of water, and an optional 5-digit number that is used as a designator for the hole.

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32008

Step 4. Determine crustal correction.

The subsidence curve predicts the depth to the crust. The starting point has as its depth the depth of water at the sediment-water interface. The difference between these depths comprises the crustal correction, incorporating two components: the thickness of sediment overlying the crust and the distance the crust departs from its ideal level predicted by the subsidence curve. This correction is applied at Step 9.

Step 5. Determine number of iterations.

The number of iterations (K1) is determined from either age TESTA or AGEB, whichever is the smaller, and dividing by the length of time specified as the increment of rotation (XINC), adding .0009 to prevent an error in rounding off, and converting the result to the integer K1.

Step 6. Read in observed thicknesses (ROPHT) and carbonate percentages (ROPHC), images 11 and 12.

Step 7. Determine the age after each iteration.

Age is determined by setting a counter AGET equal to zero, and at each iteration adding the increment of rotation (XINC) to the previous result.

Step 8. Determine angular distance of rotation.

Angular rotation is determined by multiplying the rate (deg/my) times the age of the point (my) times the constant 0.0174533, which converts degrees to radians. Rates (RATE4, RATE3, and RATE2) are used for the first pole, and (RATE1) for the second, Figure 2.3. TEST3, TEST2, and TEST1, Figure 2.3, determine which rates will apply. If the age of a

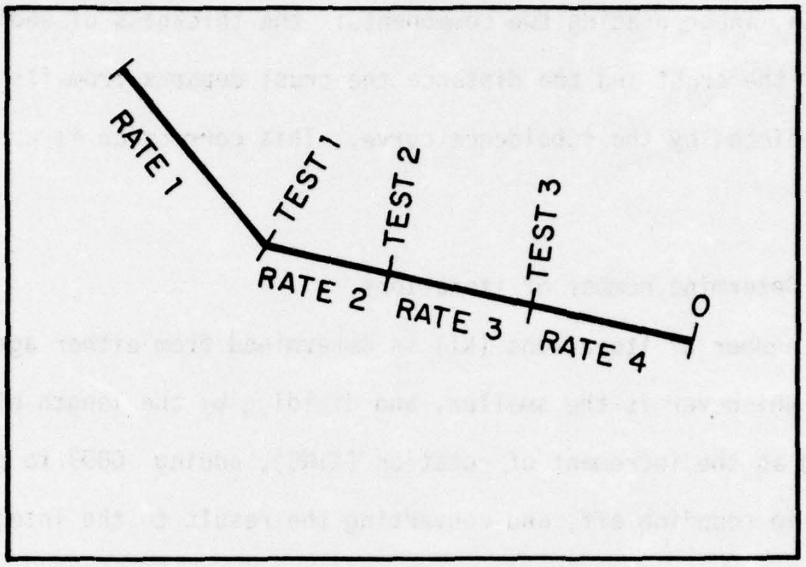

Figure 2.3. Variables TEST3, TEST2, and TEST1 set off interval of time during which the rates of rotation RATE4, RATE3, and RATE2, determine the rotation around the first pole (Hawaiian). RATE1 determines rotation around the second pole (Emperor).

point AGET is greater than TEST3, but less than TEST2, then RATE4 applies for the first TEST3 years, and RATE3 applies for the next AGET minus TEST3 years. Solutions for points older than TEST2 years are determined by similarly reasoned processes.

Step 9. Calculate initial depth of water.

At this point in the calculations, the depth of water is that which prevailed at the end of the preceding increment (previous iteration), but the depth required is that at the end of the current increment. If the preceding depth is used to enter the rate of sedimentation array (ATHIC), the rate and consequently the thickness determined will be in error, because the depth of water is too shallow. To overcome this problem, the depth from the previous iteration is adjusted by removing the thickness of sediment determined from the previous iteration according to the equation:

2.9.1 $$G = C + T + P$$

where G = depth of water at end of last iteration

C = crustal correction (Step 4)

T = total thickness of sediment removed

P = depth of crust according to subsidence curve (subroutine CRUST)

The depth determined from equation 2.9.1 is used to enter array ATHIC once again, thereby determining a new thickness and a new depth. The process is repeated twice more, using the adjusted depth each time to determine a new depth and thickness. The results at the end of the third iteration are used as the solution for depth and thickness of sediment. The three iterations begin at Step 10.

Step 10. Determine subscripts for variables ATHIC and ALITH.

Carbonate percentages are stored in array ALITH, sedimentation rates in array ATHIC. Subscripts for these 3-dimensional arrays are determined from the latitude and depth of water by subroutine TABLE (Appendix III).

Step 11. Determine the sedimentation rate.

The sedimentation rate is determined by entering array ATHIC using subscripts determined by subroutine TABLE. Subroutine XLOOK (Appendix III) interpolates among variables of array ATHIC.

Step 12. Determine the percentage of carbonate.

Carbonate is determined as for sedimentation rate, Step 11, using array ALITH.

Step 13. Correct thickness and carbonate percent for variation with time.

The arrays ALITH and ATHIC describe an average regime of sedimentation for the past 42 my. Corrections are made for temporal changes in rate of sedimentation and percentage of carbonate at this step by application of the 1-dimensional arrays CARRY (rate) and CCARY (carbonate). Array CARRY is constructed by digitizing the curve that relates deviation from the average sedimentation rate to time (Fig. 11). The values entered in array CARRY indicate the percentage that the sedimentation rate (ATHIC) must be increased or decreased for any particular time.

An example of the preparation and use of CARRY follows: from Figure 11 percentages are scaled at 1.0 my intervals; the sign of the percentage is reversed and the value entered in array CARRY; the sedimentation rate is determined from array ATHIC; array CARRY is entered using the appropriate age; if the age falls between digitized elements of CARRY, interpolation occurs; the percentage determined from CARRY is multiplied times the rate determined from ATHIC; the result is the corrected rate.

Array CCARY, which determines carbonate percentages, is prepared from Figure 10 and used in conjunction with array ALITH. All other details of CCARY are as for ALITH and CARRY.

Step 14. Determine the depth of water.

This step contains the solution for depth that began in Step 10. The depth is calculated according to

2.14.1 $$P = P_i + H_o - (H_o(1-n)(D_g-D_w))/D_b)$$

where P = depth of water after removal of sediment layer

P_i = depth of water prior to removal of sediment layer

H_o = thickness of sediment removed (determined from array ATHIC)

n = porosity (in this program assumed to 76 percent)

D_g = density of grains

D_w = density of water

D_b = density of basement.

If the number of iterations for depth of water is less than 4, control returns to Step 10, using the depth of water P as the initial depth of water.

Step 15. Determine the cumulative thickness of sediment and apply compaction correction.

The correction for compaction is derived from the relationship between the compacted thickness determined from DSDP cores and the corrected thicknesses adjusted to 76 percent porosity, Figure 2.4.

The ordinate (Fig. 2.4) is the ratio H_o/H_a, where H_o is the observed DSDP thickness and H_a is the DSDP thickness adjusted to 76 percent porosity. The abscissa (Fig. 2.4) is H_a.

The points plotted in Figure 2.4 were determined at 5 million year intervals from the data of all 23 DSDP sites. To be plotted on the figure, the corrected thickness adjusted to 76 percent porosity had to be greater than 20 m -- experience showed that the co-ordinates of corrected thicknesses less than 20 m had extremely high variation. An arbitrary value of 1.5 was used for the zero intercept on the ordinate (Fig. 2.4) and the curve was fitted by eye.

The curve (Fig. 2.4) was digitized at 25 m intervals and entered in program ESP as variable CORTT. Interpolation occurs between members of the array.

The correction for compaction is made using the relationship:

2.15.1 $$H_c = H_t \;*\; H_o/H_a$$

where H_c = compacted thickness of sediment

H_t = cumulative thickness of sediment predicted from

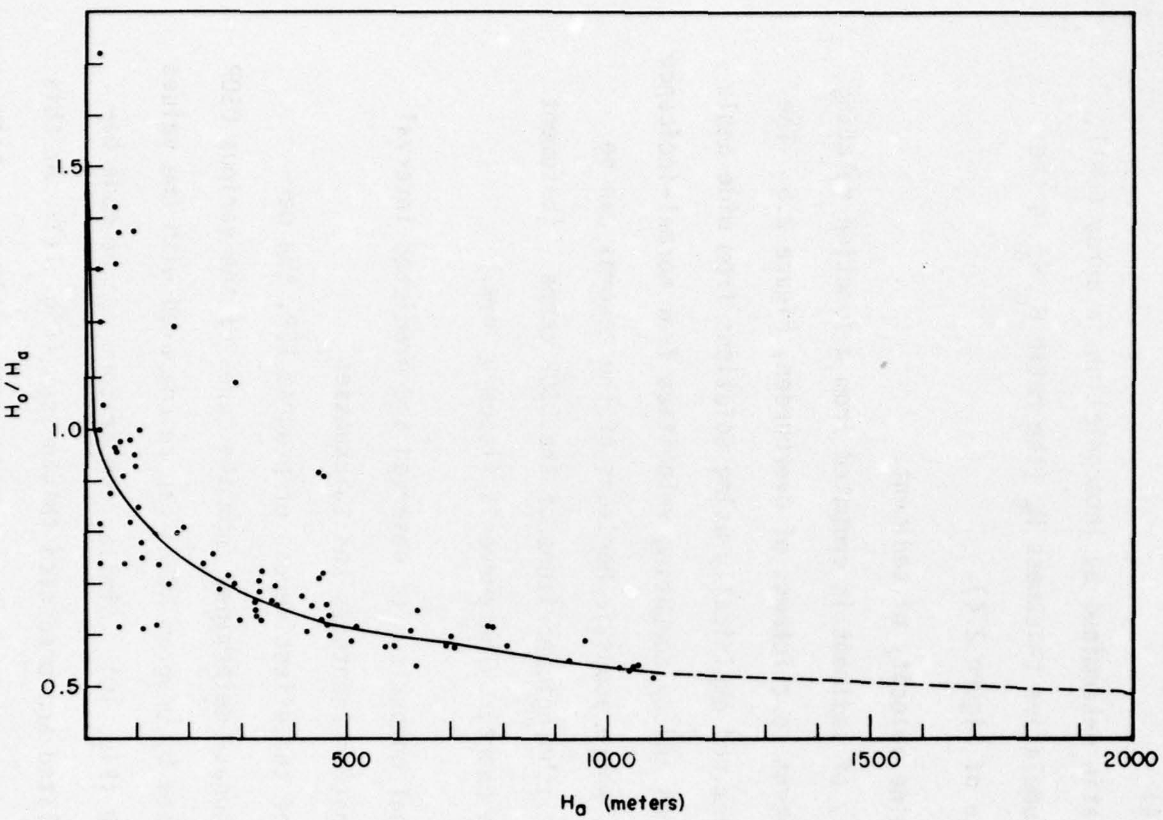

Figure 2.4. Curve used for compaction correction. The ordinate is the ratio H_o/H_a, the abscissa is H_a where H_o is the thickness observed in a DSDP core and H_a is the same thickness corrected to a porosity of 76 percent. Points are determined at 5 million year intervals from all 23 DSDP sites. Only points whose observed thickness (H_o) exceeded 20 m are plotted. In all, 16 points plotted outside the field of the figure. All of these points had ratios (H_o/H_a) less than 3.1 and thicknesses (H_a) less than 80 m. The curve is fitted by eye.

array ATHIC (Porosity 76 percent and uncorrected for compaction; the cumulative thickness H_t is the abscissa of Fig. 2.4)

H_o/H_a = the ratio determined by interpolation in array CORTT, given cumulative thickness H_t (the ratio H_o/H_a is the ordinate of Figure 2.4).

Step 16. Determine velocity of sediment.

The velocity of sediment is computed from a function relating velocity of sediment to thickness of overburden, Figure 2.5. The function is determined empirically using solutions from wide-angle reflection records and by computing velocities from normal-incicence seismic records, where acoustic horizons of the records can be correlated with lithologic horizons of the DSDP cores (basement or top of Eocene chert). The curve is fitted by eye.

Step 17. Optional comparison of observed and predicted interval carbonate percentages and thicknesses.

As a test of the effectiveness of program ESP, the percentages of carbonate determined from the cores of the various DSDP sites (values used by program ROPH) can be compared with the values predicted by ESP (Fig. 10). Similar comparisons can be made between the calculated and predicted thicknesses (Fig. 11). At this step, which the user employs at his option, the differences between predicted and observed values of carbonate percentage and thickness are calculated.

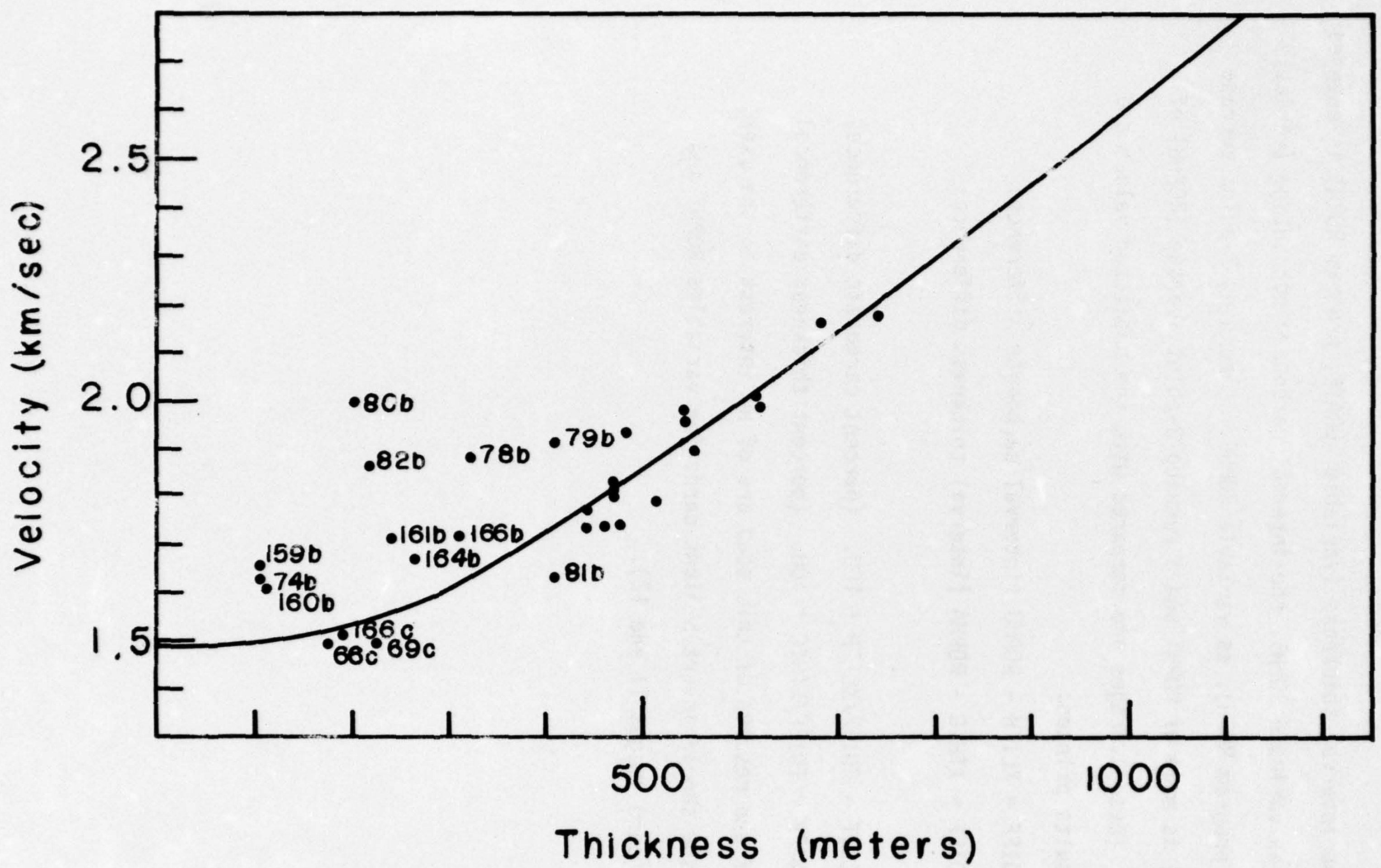

Figure 2.5. Velocity as a function of thickness of overburden. Solid, unnumbered circles are velocity solutions from sonobuoys stations in the east central Pacific (SIO, Eurydice Leg 11). Numbered circles are solutions using travel times from normal incidence seismic records correlated with horizons of DSDP cores. The number refers to the DSDP site; the letter b indicates the correlated horizon is basaltic basement, the letter c indicates the horizon is chert. The curve is fitted by eye.

The interval thickness (variable URATE, program ROPH) is entered in ESP as variable ROPHT, the interval carbonate percentage (variable FLITH, program ROPH), as variable ROPHC. A running 3-point average (ROPHA) is made of ROPHT and a running 3-point average (ROPHB) of ROPHC. These averages are compared with the predicted values and the results printed:

CDIFF = XLITH - ROPHB (interval carbonate difference)

TDIFF = XTHIC - ROPHA (interval thickness difference)

and

PCDIF = CDIFF/XLITH * 100. (percent carbonate difference)

PDIFF = TDIFF/XTHIC * 100. (percent thickness difference)

If the results of this step are of no interest to the user, he or she should insert 5 blank cards for variables ROPHT and ROPHC (card images 11 and 12).

ESP LISTING

```
      DIMENSION CORTT(81)
      DIMENSION VELA(19)
      DIMENSION CARRY(41),ROPHT(45) ,NS(25),PD(25,45)
      DIMENSION ROPHC(45),PC(25,45),CCARY(41)
      DIMENSION ATHIC(40,41,1), ALITH(40,40,1)
C
C     INPUT POLE DATA, AGE DATA, AND NUMBER OF STARTING POINTS
C
      READ(1,22)BLAD1,BLOD1,BLAD2,BLOD2,TESTA,TESTB,XINC,TEST1,TEST2,
     1 TEST3,RATE1,RATE2,RATE3,RATE4,LL
   22 FORMAT(4F10.2/3F10.2/3F10.2,4F10.1/I10)
      WRITE(2,4)BLAD1,BLOD1,BLAD2,BLOD2,TESTA,TESTB,XINC,TEST1,TEST2,
     1 TEST3,RATE1,RATE2,RATE3,RATE4,LL
    4 FORMAT(8X,'E S P   I N P U T'//
     1 3X,'LATITUDE OF HAWAIIAN POLE (BLAD1) IS',F9.2/
     1 3X,'LONGITUDE OF HAWAIIAN POLE (BLOD1) IS',F9.2/
     1 3X,'LATITUDE OF EMPEROR POLE (BLAD2) IS',F9.2/
     1 3X,'LONGITUDE OF EMPEROR POLE (BLOD2) IS',F9.2//
     1 3X,'TESTA IS',F6.1,' MILLION YEARS'/
     1 3X,'GRID IB=1 APPLIES FOR ',F4.1,' MILLION YEARS'/
     1 3X,'AGE INTERVAL IS',F5.2,' MILLION YEARS'//
     1 3X,'AGE OF TEST1 IS',F6.2,' MILLION YEARS'/
     1 3X,'AGE OF TEST2 IS',F6.2,' MILLION YEARS'/
     1 3X,'AGE OF TEST3 IS',F6.2,' MILLION YEARS'//
     1 3X,'RATE1 FOR AGES OLDER THAN TEST1 IS',F5.2,' DEG/MY'/
     1 3X,'RATE2 FROM AGES TEST2 TO TEST1 IS',F5.2,' DEG/MY'/
     1 3X,'RATE3 FROM AGES TEST3 TO TEST2 IS',F5.2,' DEG/MY',/
     1 3X,'RATE4 FROM AGES 0 TO TEST3 IS',F5.2,' DEG/MY'//
     1 3X,'NUMBER OF STARTING POINTS IS',I4/)
C
C...PRINTING OPTIONS
C     IMONY AND IAGE5 ARE FLAGS.
C     IF IMONY=1 OR MORE, THEN CARBONATE AND SED RATE ARRAYS WILL NOT
C     BE PRINTED OUT.  IF IAGE =1 OR MORE, THEN FORWARD TRACKS WILL BE
C     PRINTED OUT EVERY IAGE5 MILLION YEARS.
      READ(1, 11) IMONY, IAGES
   11 FORMAT(2I2)
C     INPUT  AGE DEPENDENCE,  ARRAYS CARRY, CCARY.
C
      READ(1, 3)  (CARRY (I), I =1, 41)
      WRITE(2, 74)  (CARRY(I), I = 1, 41)
   74 FORMAT(3X,'AGE DEPENDENCE',/,5X,'SEDIMENTATION RATE',/,(7X,20(1X,F
     14.2)))
      READ(1,3)  (CCARY(I), I = 1, 41)
    3 FORMAT(20F4.2)
      WRITE(2, 75)  (CCARY(I), I = 1, 41)
   75 FORMAT(/,5X,'CARBONATE PERCENT',/,(7X,20(1X,F4.2)))
C...INPUT THICKNESS CORRECTION ARRAY(VALUES AT 25 M. INTERVALS).
      READ(1,9)  (CORTT(I), I = 1, 81)
    9 FORMAT(20F4.3)
      WRITE(2, 76)  (CORTT(I), I = 1, 81)
```

```
   76 FORMAT(/,5X,'COMPACTION ARRAY',/,(7X,20(1X,F4.3)))
      READ(1, 8)  (VELA(I), I = 1, 19)
      WRITE(2, 12)  (VELA(I), I = 1, 19)
   12 FORMAT(/,5X,'VELOCITY ARRAY',/,(7X,19(1X,F4.2)))
    8 FORMAT(19(1X,F3.2))
C
C     INPUT CARBONATE AND SEDIMENTATION RATE ARRAYS
C
      READ(1,5,DATA=5001)
     1         (((ALITH (ID, IC, IB),ID=1,40),IC=1,40),IB=1,1)
    5 FORMAT(10F8.1)
      GO TO 5006
 5001 WRITE(2, 5002) ID, IC, IB, KEY
 5002 FORMAT(1H0, 4I10)
      STOP
 5006 KEY = 9
      READ(1,7,DATA=5001)
     1         (((ATHIC(ID,IC,IB),ID=1,40),IC =1,40),IB=1,1)
    7 FORMAT(10(F3.1,1X))
      IF(IMONY) 401,402,401
  402 IB=1
      DO 379 IC1=1,21,20
      WRITE(2,358)
  358 FORMAT(1H1,3X,'ARRAY OF SEDIMENTATION RATES BEFORE INTERPOLATION')
      WRITE(2,351)  (IC,IC=IC1,IC1+19)
      WRITE(2,352)  (ID,(ATHIC(ID,IC,IB),IC=IC1,IC1+19),ID=1,40)
  379 CONTINUE

C
C     FILL IN THE BLANKS, USING LINEAR INTERPOLATION
C     INTERPOLATE ATHIC ARRAY IN IC DIRECTION WHERE ZEROS APPEAR.
C     WILL NOT INTERPOLATE FROM ZERO ON LEFT EDGE OR TO ZERO ON
C     RIGHT EDGE.
C

  401 IB=1
      DO 7999 ID=1,40
      DO 7999 IC=1,40

      IF (ATHIC(ID,IC,IB)) 7899,7000,7899
 7000 IF  (IC-1) 7899,7899,7050
 7050 IF  (ATHIC(ID,IC-1,IB)) 7899,7899,7075

 7075 KOUNT=1
 7080 IF(ATHIC(ID,IC+KOUNT,IB)) 7200,7095,7200
 7095 IF(IC+KOUNT-40) 7096,7200,7200
 7096 KOUNT=KOUNT+1
      GO TO 7080

 7200 IF(ATHIC(ID,IC+KOUNT,IB)) 7799,7799,7210

 7210 DD=(ATHIC(ID,IC+KOUNT,IB) -ATHIC(ID,IC-1,IB))/(KOUNT+1)
      DO 7299 KONT2=0,KOUNT-1
 7299 ATHIC(ID,IC+KONT2,IB) = ATHIC(ID,IC+KONT2-1,IB) + DD

 7799 IC=IC+KOUNT
 7899 CONTINUE
 7999 CONTINUE

      IF(IMONY) 403,404,403
```

```
  404 DO 377 IB=1,1
      DO 375 IC1=1,21,20
      WRITE(2,353)
  353 FORMAT(1H1,3X,'ARRAY OF CARBONATE PERCENTAGES')
      WRITE(2,351)   (IC,IC=IC1,IC1+19)
  351 FORMAT(3X, 'IC',20(3X,I2,1X),    /' ID')
      WRITE(2,352)  (ID,(ALITH(ID,IC,IB),IC=IC1,IC1+19),ID=1,40)
  352 FORMAT(1X,I2,2X,20F6.1)
  375 CONTINUE
      DO 376 IC1=1,21,20
      WRITE(2,354)
  354 FORMAT(1H1,3X,'ARRAY OF SEDIMENTATION RATES')
      WRITE(2,351)   (IC,IC=IC1,IC1+19)
      WRITE(2,352)  (ID,(ATHIC(ID,IC,IB),IC=IC1,IC1+19),ID=1,40)
  376 CONTINUE
  377 CONTINUE
C
C
C
  403 CONTINUE
      BBPP1 = (TEST3*RATE4 +(TEST2-TEST3)*RATE3+(TEST1-TEST2)*RATE2)*
     1 .0174533
C...ROTATE EMPEROR POLE THE DISTANCE BBPP1 AROUND HAWAIIAN POLE.
      CALL ROCCW(BLAD1,BLOD1,BLAD2,BLOD2,BBPP1,BA2,BO2)
C
C     FILL PERCENT ARRAYS WITH LARGE NUMBER SO THAT **** WILL INDICATE
C     NO DATA AS WELL AS ESP=0 OR PERCENT VERY LARGE
      DO 618 I=1,25
      DO 618 J=1,45
      PD(I,J)=99999999.
  618 PC(I,J)=99999999.
C
C     LOOP THROUGH ALL HOLES
C
      DO 6000 L=1,LL
C...READ LAT., LONG., AGE OF BASEMENT, DEPTH OF WATER OF STARTING POINT
      READ(1,50) CLAD1,CLOD1,AGEB ,DEPH,NSITE
   50 FORMAT(3F10.2,20X,F10.2,1X,I5)
      WRITE(2,751)
  751 FORMAT(1H1)
      WRITE(2, 608) CLAD1, CLOD1, AGEB
      WRITE(2, 610) DEPH,NSITE
  608 FORMAT(3X,'INITIAL LAT(CLAD1) IS',F6.2,3X,'INITIAL LONGITUDE (CLOD
     1) IS',F8.2,3X,'BASEMENT AGE(AGEB) IS',F6.1)
  610 FORMAT(3X,'DEPTH OF WATER IS',F8.2,70X,'SITE NUMBER IS ',I5)
C...DETERMINE CRUSTAL CORRECTION.
      CALL CRUST(AGEB, PDEPH)
      DEPHC= DEPH-PDEPH
      WRITE(2,359)
  359 FORMAT(/)
      WRITE(2, 708) PDEPH, DEPH, DEPHC
  708 FORMAT(3X,'PDEPH =',F8.2,10X,'DEPH=',F8.2,10X,'DEPHC =',F8.2)
      WRITE(2,51)
   51 FORMAT(///)
      WRITE(2, 711)
  711 FORMAT(29X,'INT',4X,'UNCOMP',3X,'COMPACTED',3X,
     1 'CUMUL',14X,'SOUND')
      WRITE(2, 709)
  709 FORMAT(3X,'LAT',4X,'LONG',4X,'AGE',  1X,'DEPTH',1X,'CACO3',
```

```
     1          2X,'THICKNESS THICKNESS THICKNESS  ID IC IB  VELOC ',
     1      ' ROPH  AV    DIFF PCT CA AV DIF PCT',/)
      AGEC = AGEB
C...SET VARIOUS ACCUMULATORS TO ZERO.
      TCACO = 0.0
      TTHIC = 0.0
      AGET = 0.0
      COM = 0.
      COMPA=0.
C...DETERMINE NUMBER OF ITERATIONS.
      AGEN = TESTB
      IF(TESTB - AGEB) 712,712,714
  712 K1 = (TESTB/XINC + .0009)
      GO TO 715
  714 K1 = (AGEB/ XINC + .0009)
  715 READ(1,999) (ROPHT(J),J=1,45)
  999 FORMAT(20(F3.1,1X))
      READ (1,998) (ROPHC(J),J=1,45)
  998 FORMAT(26(F2.0,1X))
C
C     LOOP THROUGH TIME
C
      DO 2000 J=1,K1
      AGET = AGET + XINC
      ROPHA=0
      ROPHB=0
C...DETERMINE ANGULAR DISTANCE OF ROTATION.
      IF(AGET - (TEST3 + .0009)) 200, 200, 210
  200 BBPP1 = AGET * RATE4 * .0174533
      GO TO 3005
  210 IF(AGET - (TEST2 + .0009))220,220,230
  220 BBPP1 = (TEST3 * RATE4 + (AGET - TEST3) * RATE3) * .0174533
      GO TO 3005
  230 IF(AGET - (TEST1 + .0009)) 240,240,250
  240 BBPP1 = (TEST3*RATE4 + (TEST2 - TEST3)*RATE3+(AGET-TEST2)*RATE2)*
     1 .0174533
      GO TO 3005
  250 BBPP1 = (TEST3*RATE4 +(TEST2-TEST3)*RATE3+(TEST1-TEST2)*RATE2)*
     1 .0174533
      CALL ROCCW(BLAD1,BLOD1,CLAD1,CLOD1,BBPP1,CLAD,CLOD)
      CAD = CLAD
      COD = CLOD
      BBPP2 = ((AGET - TEST1) *RATE1) *.0174533
      CALL ROCCW(BA2, BO2, CAD, COD, BBPP2,CLAD, CLOD)
      GO TO 3006
C...ROTATE POINTS YOUNGER THAN TEST1 YEARS (HAWAIIAN POLE ONLY).
 3005 CALL ROCCW(BLAD1,BLOD1,CLAD1,CLOD1,BBPP1,CLAD, CLOD)
 3006 AGEC = AGEC - XINC
      CALL CRUST(AGEC, PDEPH)
C...DETERMINE DEPTH OF WATER.
      PDEPH = PDEPH + DEPHC + COMPA
      D = PDEPH
      DO 1000 ITER=1,3
C...DETERMINE SUBSCRIPTS FOR ATHIC AND ALITH.
      CALL TABLE(AGEN, PDEPH, CLAD, TESTA,MFLAG,ID,IC,IB)
C...INTERPOLATE TO FIND RATE OF SEDIMENTATION.
      CALL XLOOK(ATHIC,ID,IC,IB,PDEPH,CLAD, XTHIC)
C...INTERPOLATE TO FIND CARBONATE PERCENT.
      CALL XLOOK(ALITH,ID,IC,IB,PDEPH,CLAD,XLITH)
C...END LOOP IF MFLAG(SET BY TABLE) IS 1, BECAUSE POINT LIES OUTSIDE GRI
```

```
C     AND ATHIC).
      IF(MFLAG) 902, 902, 6000
C...REDUCE UNCOMPACTED INTERVAL THICKNESS AND PERCENT CARBONATE BY
C...AMOUNTS IN ARRAYS CARRY AND CCARY,RESP.  IF ARRAYS ARE ZERO THEN
C...THERE IS NO REDUCTION.
  902 IF(AGET-40.) 910,909,909
  909 XTHIC = XTHIC - XTHIC * CARRY(41)
      XLITH=XLITH-XLITH*CCARY(41)
      GO TO 801
  910 I = IFIX(AGET + .00001) + 1
      FAGET = FLOAT(I - 1)
      XI = AGET - FAGET
      XII = (CARRY(I) - CARRY(I + 1))* XI
      XIII = CARRY(I) - XII
      XIIC=(CCARY(I)-CCARY(I+1))*XI
      XIIIC=CCARY(I)-XIIC
      XLITH=-XLITH*XIIIC+XLITH
      XTHIC = XTHIC * (-XIII) + XTHIC
  801 FTHIC = XTHIC
      INT = (IFIX(FTHIC + .00001))/25. + 1
      FINT = FLOAT (INT - 1) * 25.
      FI = (FTHIC - FINT)/ 25.
      FII = (CORTT(INT) - CORTT(INT + 1)) * FI
      FIII = CORTT(INT) - FII
      FTHIC = FTHIC * FIII
 1000 PDEPH = D + FTHIC - .24*1.6*FTHIC/2.3
  917 TTHIC = TTHIC + XTHIC
C...COMPACT THICKNESS
      INT = (IFIX(TTHIC + .000001))/ 25. + 1
      FINT = FLOAT(INT - 1) * 25.
      FI = (TTHIC - FINT)/25.
      FII = (CORTT(INT) - CORTT(INT + 1)) * FI
      FIII= CORTT(INT) - FII
      COMPA = TTHIC * FIII
C...DETERMINE ADJUSTED INTERVAL THICKNESS.
      CINT = COMPA - COM
      COM = COMPA
C...DETERMINE VELOCITY.
      INT =  IFIX((COMPA + .00001)/50.) + 1
      FINT = FLOAT(INT - 1) * 50.
      FI = (COMPA - FINT)/50.
      FII = (VELA(INT) - VELA(INT + 1))   * FI
      VEL = VELA(INT) - FII
      IF (J.EQ. 1 .OR.  J .GE.K1) GO TO 956
      ROPHA=(ROPHT(J-1)+ROPHT(J+1)-2*ROPHT(J))/3
      ROPHB=(ROPHC(J-1)+ROPHC(J+1)-2*ROPHC(J))/3
  956 ROPHA=ROPHA+ROPHT(J)
      ROPHB=ROPHB+ROPHC(J)
      CDIFF=XLITH-ROPHB
      TDIFF=XTHIC-ROPHA
      IF(XTHIC) 960,960,950
  950 PDIFF=TDIFF/XTHIC*100.
      GO TO 970
  960 PDIFF=99999999.
  970 PD(L,J)=PDIFF
      NS(L)=NSITE
      IF(XLITH) 961,962,961
  961 PCDIF=CDIFF/XLITH*100
      GO TO 963
  962 PCDIF=999999999.
```

```
  963 PC(L,J)=PCDIF
      IF(CLOD) 905, 905, 906
  905 ACLOD = CLOD
      GO TO 901
  906 IF(CLOD - 180.) 905, 905, 907
  907 ACLOD = CLOD - 360.
  901 IF (IAGES) 921,921,924
  924 IAGET=IFIX(AGET)
      IF(MOD(IAGET,IAGES)) 2000,921,2000
C...OUTPUT FORWARD TRACKS
  921 WRITE(2,900) CLAD, ACLOD,AGET,PDEPH,XLITH,XTHIC,CINT, COMPA
     1,ID,IC,IB,VEL,ROPHT(J),ROPHA,TDIFF,PDIFF,ROPHC(J),ROPHB,CDIFF,
     1PCDIF
  900 FORMAT(1X,F6.2,1X,F7.2,1X,F5.1,1X,I4,2X,F4.1,3F10.1, I6,
     1 2(1X,I2),2X,F5.3,1X,2F5.1,F6.1,I4,2I3,2I4)
 2000 CONTINUE
 6000 CONTINUE
C
C     END OF ALL LOOPS
C
C...OUTPUT PERCENT ERROR TABLES
      DO 930 J1=1,22,21
      WRITE(2,972) (J,J=J1,J1+20)
      WRITE(2,973) (NS(L),(PD(L,J),J=J1,J1+20),L=1,LL)
  930 CONTINUE
      DO 933 J1=1,22,21
      WRITE(2,974) (J,J=J1,J1+20)
      WRITE(2,973) (NS(L),(PC(L,J),J=J1,J1+20),L=1,LL)
  933 CONTINUE
  972 FORMAT(1H1, ' ERROR IN UNCOMPACTED INTERVAL THICKNESS(PERCENT)',
     1 //,7X,21I5/)
  973 FORMAT(1X,I3,3X,21I5)
  974 FORMAT(1H1,' ERROR IN INTERVAL CARBONATE(PERCENT)',//,7X,21I5/)
      CALL EXIT
      END
```

ESP OUTPUT

```
E S P   I N P U T

LATITUDE OF HAWAIIAN POLE (BLAD1) IS      72.00
LONGITUDE OF HAWAIIAN POLE (BLOD1) IS    -83.00
LATITUDE OF EMPEROR POLE (BLAD2) IS     17.00
LONGITUDE OF EMPEROR POLE (BLOD2) IS  -107.00

TESTA IS 110.0 MILLION YEARS
GRID IB=1 APPLIES FOR 42.0 MILLION YEARS
AGE INTERVAL IS 1.00 MILLION YEARS

AGE OF TEST1 IS 42.00 MILLION YEARS
AGE OF TEST2 IS 25.00 MILLION YEARS
AGE OF TEST3 IS 10.00 MILLION YEARS

RATE1 FOR AGES OLDER THAN TEST1 IS 0.81 DEG/MY
RATE2 FROM AGES TEST2 TO TEST1 IS 0.81 DEG/MY
RATE3 FROM AGES TEST3 TO TEST2 IS 0.81 DEG/MY
RATE4 FROM AGES 0 TO TEST3 IS 0.81 DEG/MY

NUMBER OF STARTING POINTS IS  23

AGE DEPENDENCE
  SEDIMENTATION RATE
    0.27 0.17 0.30 0.35 0.34 0.32 0.38 0.36 0.28 0.25 0.21 0.06 0.03 -.04 0.06 0.08 0.06 0.12 0.11 -.05
    -.30 -.40 -.47 -.51 -.43 -.18 -.06 -.07 -.13 -.06 0.01 0.16 0.21 0.37 0.43 0.68 0.76 0.82 0.80 0.83
    0.85

  CARBONATE PERCENT
    -.05 -.05 -.05 0.06 0.03 0.06 0.12 -.01 0.03 0.10 0.13 0.15 0.06 0.05 0.04 -.02 0.04 0.02 0.00 -.04
    -.07 -.06 -.11 -.04 -.11 -.05 -.05 -.04 -.03 -.01 0.00 0.01 -.01 0.01 -.03 0.05 0.35 0.40 0.50 0.61
    0.66

  COMPACTION ARRAY
    **** .960 .910 .875 .835 .805 .780 .761 .742 .728 .712 .700 .687 .675 .665 .655 .648 .640 .632 .628
    .621 .612 .610 .605 .600 .595 .592 .590 .588 .583 .580 .578 .572 .569 .562 .558 .553 .550 .547 .542
    .540 .538 .532 .531 .530 .529 .529 .527 .526 .525 .524 .523 .521 .520 .520 .519 .518 .517 .516 .515
    .514 .513 .512 .511 .500 .509 .508 .507 .506 .505 .504 .503 .502 .501 .500 .500 .499 .498 .497 .496
    .495

  VELOCITY ARRAY
    1.49 1.49 1.50 1.51 1.53 1.57 1.60 1.64 1.70 1.77 1.84 1.92 2.00 2.07 2.15 2.23 2.30 2.38 2.45
```

ARRAY OF SEDIMENTATION RATES BEFORE INTERPOLATION

ID \ IC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	7.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	15.0	17.5	20.0	22.0	0.0	30.0	0.0	40.0	45.0	49.0	50.0
2	6.9	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	14.5	17.0	20.0	20.7	0.0	29.0	0.0	39.8	45.0	49.0	50.0
3	6.8	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.0	14.0	17.0	19.9	21.5	0.0	28.5	0.0	39.4	45.0	49.0	50.0
4	6.7	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	13.5	16.0	19.8	21.2	0.0	28.0	0.0	39.0	45.0	49.0	50.0
5	6.6	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	13.0	15.5	18.8	21.0	0.0	27.5	0.0	38.5	45.0	48.0	50.0
6	6.4	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	12.5	15.0	18.4	20.5	0.0	26.5	0.0	38.0	45.0	48.0	50.0
7	6.0	0.0	0.0	0.0	0.0	0.0	0.0	8.4	0.0	12.0	15.0	18.0	20.0	0.0	26.0	0.0	37.5	45.0	48.0	50.0
8	5.8	0.0	0.0	0.0	0.0	0.0	0.0	8.2	0.0	11.0	13.5	17.0	19.5	0.0	25.5	0.0	37.0	45.0	47.5	50.0
9	5.4	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	9.0	12.5	16.0	19.0	0.0	25.0	30.0	37.0	45.0	47.0	50.0
10	5.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	8.5	11.0	15.0	18.0	0.0	24.0	28.5	37.0	43.0	45.0	50.0
11	4.2	5.0	5.0	0.0	0.0	0.0	0.0	7.0	0.0	7.6	10.0	14.0	17.0	21.0	23.5	27.0	36.0	42.0	43.0	50.0
12	2.1	3.4	4.7	5.0	5.0	0.0	0.0	6.5	0.0	7.4	9.5	12.0	16.0	20.0	22.5	25.5	36.0	41.0	42.0	50.0
13	1.6	1.9	2.2	3.0	4.4	5.0	5.0	6.0	0.0	7.2	8.5	11.0	15.0	18.0	22.0	26.5	35.0	40.0	42.0	50.0
14	1.3	1.6	1.9	2.2	2.5	3.0	4.6	5.0	5.0	7.0	8.0	10.0	15.0	17.0	21.0	26.0	35.0	38.5	41.5	50.0
15	1.0	1.2	1.3	1.5	1.6	1.7	1.9	2.2	4.1	5.0	7.0	9.0	14.0	15.0	20.0	26.0	32.0	37.0	41.0	49.0
16	0.6	0.8	1.0	1.1	1.3	1.4	1.6	1.7	1.9	3.0	5.0	7.0	11.0	13.0	18.0	23.0	30.0	35.0	40.5	48.0
17	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.9	1.2	1.0	1.0	4.0	7.0	5.0	17.0	22.0	27.0	32.0	40.0	47.0
18	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.0	0.0	1.5	1.0	3.0	13.0	18.0	20.0	30.0	35.0	45.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0	8.0	10.0	19.9	25.0	32.5	45.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	7.0	15.0	20.0	25.0	37.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	6.0	12.0	18.0	20.0	27.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	5.2	10.0	15.0	18.0	20.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	5.0	8.0	13.0	15.0	17.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	4.5	6.0	10.0	13.0	15.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.2	5.6	8.0	10.0	12.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	4.1	5.5	7.0	8.0	10.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	5.4	6.4	7.4	8.5
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.5	5.2	6.3	7.3	8.4
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.0	5.0	6.3	7.3	8.4
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.9	6.3	7.3	8.3
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.9	6.2	7.2	8.3
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.8	6.1	7.1	8.2
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.7	6.0	7.0	8.1
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.7	5.9	6.9	7.8
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.6	5.6	6.7	7.6
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.4	4.5	5.5	6.5	7.4
37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.3	4.3	5.3	6.3	7.3
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.2	4.2	5.2	6.2	7.2
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.1	4.1	5.1	6.1	7.1
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	4.0	5.0	6.0	7.0

ARRAY OF SEDIMENTATION RATES BEFORE INTERPOLATION

IC / ID	21	22	23	24	25	26	27	28	29	30
1	48.0	45.0	40.0	0.0	35.0	33.5	32.0	30.0	27.5	25.0
2	47.0	45.0	38.0	0.0	32.0	31.5	31.0	29.5	27.0	24.0
3	46.0	45.0	37.0	0.0	32.0	31.5	30.5	29.0	26.5	23.0
4	46.0	45.0	37.5	0.0	31.0	30.5	30.0	28.0	26.5	22.5
5	45.0	45.0	36.5	0.0	32.5	30.5	29.0	27.0	26.0	22.0
6	45.0	44.0	36.0	0.0	32.0	30.3	28.5	26.5	25.5	21.0
7	44.0	44.0	35.5	0.0	31.5	31.0	28.0	26.0	25.0	20.0
8	44.0	44.0	35.0	0.0	30.5	30.0	27.5	25.5	22.0	17.5
9	44.0	44.0	34.0	0.0	30.5	27.0	27.0	25.0	20.0	16.5
10	43.0	43.0	33.5	0.0	27.0	27.0	24.0	22.0	19.0	15.0
11	43.0	41.0	32.0	30.0	25.0	24.0	22.0	22.0	17.0	12.0
12	42.0	40.0	31.5	25.0	24.0	22.0	20.0	20.0	16.0	10.0
13	41.0	38.0	31.0	23.0	21.0	20.0	19.0	19.0	12.0	9.0
14	41.0	35.0	30.0	21.0	20.0	18.0	17.0	17.0	10.0	8.3
15	40.0	34.0	27.5	20.0	15.0	14.0	15.0	15.0	7.0	3.7
16	40.0	32.0	22.0	16.0	14.0	13.0	12.0	12.0	3.3	2.0
17	37.0	30.0	20.0	14.0	11.0	11.0	10.0	10.0	2.0	0.5
18	32.0	25.0	18.0	12.0	10.0	10.0	8.0	8.0	1.0	0.0
19	30.0	20.0	14.0	11.0	9.0	8.0	5.0	4.0	0.2	0.0
20	25.0	12.5	16.0	10.0	8.0	6.0	4.0	3.0	0.2	0.0
21	15.0	10.0	9.0	9.0	7.0	4.9	3.0	2.5	0.0	0.0
22	11.0	9.0	8.0	7.0	6.0	4.8	2.5	2.4	0.0	0.0
23	9.5	8.0	7.0	6.0	5.8	4.7	2.4	2.3	0.0	0.0
24	8.4	7.7	6.9	6.0	5.6	4.6	2.3	2.2	0.0	0.0
25	8.7	7.5	6.9	6.0	5.4	4.6	2.3	2.2	0.0	0.0
26	8.6	7.5	6.9	5.7	5.2	4.5	2.3	2.1	0.0	0.0
27	8.5	7.5	6.9	5.6	5.0	4.3	2.2	2.0	0.0	0.0
28	8.5	7.5	6.9	5.5	4.9	4.2	2.1	0.5	0.0	0.0
29	8.5	7.5	6.9	5.4	4.8	4.0	1.9	0.5	0.0	0.0
30	8.5	7.5	6.9	5.3	4.7	3.8	1.8	0.5	0.0	0.0
31	8.4	7.5	6.9	5.2	4.6	3.5	1.7	0.5	0.0	0.0
32	8.4	7.5	6.9	5.1	4.5	3.5	1.6	0.5	0.0	0.0
33	8.3	7.5	6.8	5.0	4.5	3.4	1.5	0.5	0.0	0.0
34	8.2	7.5	6.7	5.0	4.4	3.3	1.5	0.5	0.0	0.0
35	8.1	7.4	6.5	5.0	4.1	3.0	1.5	0.5	0.0	0.0
36	8.0	7.3	6.4	4.9	4.1	2.9	1.5	0.5	0.0	0.0
37	7.8	7.2	6.3	4.8	4.0	2.8	1.5	0.5	0.0	0.0
38	7.6	7.1	6.2	4.7	3.9	2.7	1.4	0.5	0.0	0.0
39	7.4	7.1	6.1	4.6	3.8	2.6	1.3	0.5	0.0	0.0
40	7.3	7.0	6.1	4.5	3.7	2.5	1.2	0.5	0.0	0.0

IC / ID	31	32	33	34	35	36	37	38	39	40
1	22.0	20.0	17.5	0.0	10.0	0.0	0.0	8.0	0.0	7.0
2	21.5	18.5	16.0	0.0	9.6	0.0	0.0	7.8	0.0	6.9
3	21.0	17.5	15.0	0.0	9.3	0.0	0.0	7.0	0.0	6.8
4	20.0	16.0	13.5	0.0	9.0	0.0	0.0	7.6	0.0	6.7
5	17.0	15.0	12.5	0.0	8.8	0.0	0.0	7.5	0.0	6.5
6	16.0	14.0	11.5	0.0	8.4	0.0	0.0	6.8	0.0	6.3
7	15.0	12.5	10.0	0.0	8.2	0.0	0.0	6.2	0.0	6.0
8	14.0	11.0	9.5	0.0	8.0	0.0	0.0	5.9	0.0	5.8
9	13.0	10.0	9.0	0.0	7.0	0.0	0.0	5.8	0.0	5.5
10	11.0	9.5	8.5	0.0	6.0	0.0	0.0	5.5	0.0	5.0
11	10.0	9.0	8.0	0.0	5.7	0.0	0.0	5.0	0.0	4.0
12	8.3	8.0	7.0	0.0	5.5	0.0	0.0	3.0	0.0	3.0
13	8.0	7.0	6.0	0.0	5.0	0.0	0.0	2.7	0.0	2.1
14	5.0	5.0	4.4	0.0	2.7	0.0	0.0	0.0	0.0	0.0
15	2.0	2.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ARRAY OF CARBONATE PERCENTAGES

ID \ IC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	83.8	85.0	65.0	85.4	85.8	86.2	86.6	87.0	87.4	87.8	88.2	88.6	89.0	89.4	89.7	90.0	91.0	91.7	93.5	95.0
2	33.0	84.1	84.5	85.0	85.5	85.9	86.3	86.7	87.1	87.5	87.9	88.3	88.7	89.1	89.5	83.7	90.0	91.7	93.5	95.0
3	82.4	83.2	83.6	84.0	84.5	85.0	85.4	85.8	86.2	86.6	87.0	87.4	87.8	88.2	89.5	87.7	90.0	91.7	93.5	95.0
4	81.6	82.3	82.9	83.5	84.0	84.5	85.0	65.2	85.6	86.0	86.2	86.8	87.4	88.0	88.2	88.6	90.0	91.7	93.5	95.0
5	80.8	81.4	81.9	82.4	83.0	83.5	84.0	84.5	85.0	85.3	85.4	86.2	87.0	87.8	68.6	88.5	90.0	91.7	93.5	95.0
6	80.0	80.5	81.0	81.5	82.0	82.4	82.8	83.2	83.6	84.5	85.3	86.1	86.9	87.7	88.5	88.3	90.0	91.7	93.5	95.0
7	76.0	77.5	79.5	80.0	81.0	81.5	82.0	82.5	83.0	83.5	84.2	85.0	86.2	87.5	88.7	88.0	90.0	91.7	93.5	95.0
8	73.0	74.2	75.4	76.6	78.0	80.0	80.5	81.0	81.5	82.0	82.7	83.5	85.0	86.2	87.4	88.7	90.0	91.7	93.5	95.0
9	67.5	70.0	71.7	73.4	75.0	76.2	77.4	78.6	80.0	81.0	81.7	82.5	84.0	85.5	87.0	88.5	90.0	91.7	93.5	95.0
10	62.5	64.3	66.2	68.1	70.0	71.7	73.4	75.1	76.0	77.0	80.0	81.5	83.0	85.0	86.7	88.4	90.0	91.7	93.5	95.0
11	55.0	57.5	60.0	62.2	64.4	66.6	70.0	71.5	73.0	74.0	76.0	80.0	82.5	84.0	86.0	88.0	90.0	93.5	93.5	95.0
12	50.0	52.0	53.7	55.5	57.4	60.0	63.3	63.6	70.0	71.0	73.0	76.0	81.0	83.0	86.0	88.0	90.0	93.5	93.5	95.0
13	30.0	35.0	38.0	40.0	45.0	51.0	54.0	56.0	62.0	66.0	71.0	73.0	80.0	82.5	85.5	87.0	90.0	91.2	92.4	93.6
14	5.0	10.0	15.0	21.0	30.0	32.0	35.0	38.0	45.0	60.0	65.5	71.0	78.0	82.0	85.0	87.0	90.0	90.8	91.6	92.4
15	0.0	0.0	0.0	0.0	5.0	10.0	20.0	26.0	33.0	45.0	60.0	67.0	75.0	80.0	82.5	85.5	90.0	90.4	90.8	91.2
16	0.0	0.0	0.0	0.0	0.0	0.0	1.0	9.0	15.0	30.0	48.0	65.0	73.0	78.0	80.0	84.0	87.0	90.0	90.0	90.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	9.0	32.0	57.0	68.0	74.0	79.0	81.0	85.0	87.0	88.0	88.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	35.0	60.0	67.0	74.0	81.0	82.0	85.0	86.5	86.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	35.0	52.0	65.0	75.0	81.0	82.0	86.0	85.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	5.0	25.0	50.0	65.0	75.0	81.0	85.0	81.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	20.0	52.0	70.0	79.0	84.0	78.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.5	45.0	70.0	79.0	82.0	76.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.0	40.0	70.0	79.0	78.0	73.5
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.0	50.0	70.0	72.0	70.0	71.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.0	50.0	50.0	45.0	50.0	55.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.0	30.0	30.0	41.0	41.0	30.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.8	7.5	7.5	9.0	11.0	15.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.4	1.0	1.0	2.0	3.0
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.8	1.0	2.0
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.8	0.9
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.7
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.3	0.4	0.5	0.7
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.3	0.4	0.5	0.7
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.4	0.7
37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.4	0.7
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.3	0.4	0.7
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.4	0.7
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.3	0.6

ARRAY OF CARBONATE PERCENTAGES

ID	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	95.0	95.0	94.0	93.0	92.0	91.0	90.0	89.7	89.4	89.0	88.6	88.2	87.8	87.4	87.0	86.6	86.2	85.8	85.4	85.0
2	95.0	95.0	94.0	93.0	92.0	91.0	90.0	89.4	89.0	88.6	88.2	87.8	87.4	87.0	86.6	86.2	85.8	85.4	85.0	84.2
3	95.0	95.0	94.0	93.0	92.0	90.0	89.5	89.1	88.7	88.2	87.8	87.4	87.0	86.6	86.2	85.8	85.4	85.0	84.2	83.5
4	95.0	95.0	94.0	93.0	92.0	90.0	89.5	89.1	88.6	88.1	87.6	87.1	86.7	84.3	85.9	85.4	85.0	84.2	83.5	82.8
5	95.0	95.0	94.0	93.0	92.0	89.7	89.4	89.0	88.5	88.0	87.5	87.0	86.5	86.0	85.5	85.0	84.7	83.5	82.8	82.1
6	95.0	95.0	93.5	91.7	90.0	89.5	89.0	88.5	88.0	87.5	87.0	86.5	86.0	85.5	85.0	84.1	83.5	82.8	82.1	81.4
7	95.0	95.0	93.5	91.7	90.0	89.4	88.8	88.3	87.8	87.2	86.6	86.1	85.5	85.0	84.5	83.4	82.8	82.1	81.4	80.7
8	95.0	95.0	93.5	91.7	90.0	89.4	89.4	88.2	87.4	86.8	86.2	85.6	85.0	84.0	83.4	82.8	82.1	81.4	80.7	80.0
9	95.0	95.0	93.5	91.7	90.0	89.1	88.2	87.4	86.6	85.8	85.0	85.0	84.0	82.7	82.2	81.8	81.4	80.7	80.0	76.0
10	95.0	95.0	93.5	91.7	90.0	89.0	98.0	87.0	86.0	85.0	84.0	64.0	83.0	82.6	82.0	81.4	80.7	80.0	75.0	73.0
11	95.0	94.0	93.0	91.5	90.0	88.7	87.4	86.2	85.0	84.0	83.0	83.0	82.0	81.6	80.0	80.0	80.0	75.0	70.0	68.0
12	95.0	94.0	93.0	91.5	90.0	88.0	87.0	85.0	84.0	83.0	82.1	82.0	81.0	81.5	80.0	75.0	72.0	68.0	67.0	65.0
13	93.6	93.0	92.7	90.4	90.0	86.0	85.0	83.5	82.0	82.0	81.0	81.0	80.0	78.0	71.0	68.0	65.0	63.0	62.0	60.0
14	92.4	92.0	90.4	88.2	90.0	85.0	83.5	81.5	81.0	81.0	80.0	80.0	75.0	65.0	62.0	60.0	50.0	30.0	15.0	0.0
15	91.2	91.0	88.7	86.6	87.0	83.0	81.5	80.5	80.0	75.0	68.0	64.0	59.0	50.0	20.0	0.0	0.0	0.0	0.0	0.0
16	90.0	90.0	87.0	85.0	83.5	81.0	80.0	75.0	68.0	62.0	55.0	40.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	87.0	85.0	81.5	81.5	80.0	72.0	66.0	58.0	45.0	28.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	82.5	82.0	78.0	72.0	71.0	49.0	45.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	80.0	75.0	70.0	58.0	55.0	0.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	75.5	70.0	57.0	45.0	8.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	72.0	60.0	45.0	10.0	4.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	69.0	50.0	25.0	9.0	3.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	63.0	35.0	15.0	7.0	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	55.0	35.0	11.0	6.0	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	50.0	30.0	11.0	6.0	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	30.0	15.0	11.0	6.0	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	12.0	10.0	10.0	5.5	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	3.0	2.0	1.0	1.0	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.9	0.7	0.5	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.7	0.5	0.4	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.6	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.6	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	0.5	0.4	0.3	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	0.4	0.4	0.2	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ARRAY OF SEDIMENTATION RATES

IC / ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	7.0	7.4	7.9	8.3	8.7	9.1	9.6	10.0	12.5	15.0	17.5	20.0	22.0	26.0	30.0	35.0	40.0	45.0	49.0	50.0
2	6.9	7.3	7.8	8.2	8.7	9.1	9.6	10.0	12.3	14.5	17.0	20.0	20.7	24.9	29.0	34.4	39.8	45.0	49.0	50.0
3	6.8	7.2	7.7	8.1	8.5	8.9	9.4	9.8	11.9	14.0	17.0	19.9	21.5	25.0	28.5	34.0	39.4	45.0	49.0	50.0
4	6.7	7.1	7.5	7.9	8.4	8.8	9.2	9.6	11.6	13.5	16.0	19.8	21.2	24.6	28.0	33.5	39.0	45.0	49.0	50.0
5	6.6	7.0	7.4	7.8	8.2	8.6	9.0	9.4	11.2	13.0	15.5	18.8	21.0	24.3	27.5	33.0	38.5	45.0	48.0	50.0
6	6.4	6.8	7.1	7.5	7.9	8.3	8.6	9.0	10.8	12.5	15.0	18.4	20.5	23.5	26.5	32.3	38.0	45.0	48.0	50.0
7	6.0	6.3	6.7	7.0	7.4	7.7	8.1	8.4	10.2	12.0	15.0	18.0	20.0	23.0	26.0	31.8	37.5	45.0	48.0	50.0
8	5.8	6.1	6.5	6.8	7.2	7.5	7.9	6.2	9.6	11.0	13.5	17.0	19.5	22.5	25.5	31.3	37.0	45.0	47.5	50.0
9	5.4	5.7	6.1	6.4	6.8	7.1	7.5	7.8	8.4	9.0	12.5	16.0	19.0	22.0	25.0	30.0	37.0	45.0	47.0	50.0
10	5.0	5.3	5.7	6.0	6.4	6.7	7.1	7.4	8.0	8.5	11.0	15.0	18.0	21.0	24.0	28.5	37.0	43.0	45.0	50.0
11	4.2	5.0	5.0	5.4	5.8	6.2	6.6	7.0	7.3	7.6	10.0	14.0	17.0	21.0	23.5	27.0	36.0	42.0	43.0	50.0
12	2.1	3.4	4.7	5.0	5.0	5.5	6.0	6.5	7.0	7.4	9.5	12.0	16.0	20.0	22.5	26.5	36.0	41.0	42.0	50.0
13	1.6	1.9	2.2	3.0	4.4	5.0	5.0	6.0	6.0	7.2	8.5	11.0	15.0	18.0	22.0	26.5	35.0	40.0	42.0	50.0
14	1.3	1.6	1.9	2.2	2.5	3.0	4.6	5.0	5.0	7.0	6.0	10.0	15.0	17.0	21.0	26.0	35.0	38.5	41.5	50.0
15	1.0	1.2	1.3	1.5	1.6	1.7	1.9	2.2	4.1	5.0	7.0	9.0	14.0	15.0	20.0	26.0	32.0	37.0	41.0	49.0
16	0.6	0.8	1.0	1.1	1.3	1.4	1.6	1.7	1.9	3.0	5.0	7.0	11.0	13.0	18.0	23.0	30.0	35.0	40.5	48.0
17	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.9	1.2	1.0	1.0	4.0	7.0	5.0	17.0	22.0	27.0	32.0	40.0	47.0
18	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.6	1.1	1.5	1.0	3.0	13.0	18.0	20.0	30.0	35.0	45.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0	8.0	10.0	19.9	25.0	32.5	45.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	7.0	15.0	20.0	25.0	37.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	6.0	12.0	18.0	20.0	27.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	5.2	10.0	15.0	18.0	20.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	5.0	8.0	13.0	15.0	17.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	4.5	6.0	10.0	13.0	15.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	4.2	5.6	8.0	10.0	12.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	4.1	5.5	7.0	8.0	10.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	4.0	5.4	6.4	7.4	8.5
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.5	5.2	6.3	7.3	8.4
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	3.0	5.0	6.3	7.3	8.4
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.9	6.3	7.3	8.3
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.9	6.2	7.2	8.3
32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.8	6.1	7.1	8.2
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.7	6.0	7.0	8.1
34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.7	5.9	6.9	7.8
35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.5	4.6	5.6	6.7	7.6
36	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.4	4.5	5.5	6.5	7.4
37	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.3	4.3	5.3	6.3	7.3
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.2	4.2	5.2	6.2	7.2
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.1	4.1	5.1	6.1	7.1
40	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	4.0	5.0	6.0	7.0

ARRAY OF SEDIMENTATION RATES

IC ID	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	48.0	45.0	40.0	37.5	35.0	33.5	32.0	30.0	27.5	25.0	22.0	20.0	17.5	13.8	10.0	9.3	8.7	8.0	7.5	7.0
2	47.0	45.0	38.0	35.0	32.0	31.5	31.0	29.5	27.0	24.0	21.5	18.5	16.0	12.8	9.6	9.0	8.4	7.8	7.4	6.9
3	46.0	45.0	37.0	34.5	32.0	31.5	30.5	29.0	26.5	23.0	21.0	17.5	15.0	12.2	9.3	8.5	7.8	7.0	6.9	6.8
4	46.0	45.0	37.5	34.3	31.0	30.5	30.0	28.0	26.5	22.5	20.0	16.0	13.5	11.3	9.0	8.5	8.1	7.6	7.2	6.7
5	45.0	45.0	36.5	34.5	32.5	30.5	29.0	27.0	26.0	22.0	17.0	15.0	12.5	10.7	8.8	8.4	7.9	7.5	7.0	6.5
6	45.0	44.0	36.0	34.0	32.0	30.3	28.5	26.5	25.5	21.0	16.0	14.0	11.5	10.0	8.4	7.9	7.3	6.8	6.6	6.3
7	44.0	44.0	35.5	33.5	31.5	31.0	28.0	26.0	25.0	20.0	15.0	12.5	10.0	9.1	8.2	7.5	6.9	6.2	6.1	6.0
8	44.0	44.0	35.0	32.8	30.5	30.0	27.5	25.5	22.0	17.5	14.0	11.0	9.5	8.8	8.0	7.3	6.6	5.9	5.9	5.8
9	44.0	44.0	34.0	32.3	30.5	27.0	27.0	25.0	20.0	16.5	13.0	10.0	9.0	8.0	7.0	6.6	6.2	5.8	5.7	5.5
10	43.0	43.0	33.5	30.3	27.0	27.0	24.0	22.0	19.0	15.0	11.0	9.5	8.5	7.3	6.0	5.8	5.7	5.5	5.3	5.0
11	43.0	41.0	32.0	30.0	25.0	24.0	22.0	22.0	17.0	12.0	10.0	9.0	8.0	6.9	5.7	5.5	5.2	5.0	4.5	4.0
12	42.0	40.0	31.5	25.0	24.0	22.0	20.0	20.0	16.0	10.0	8.3	8.0	7.0	6.3	5.5	4.7	3.8	3.0	3.0	3.0
13	41.0	38.0	31.0	23.0	21.0	20.0	19.0	19.0	12.0	9.0	8.0	7.0	6.0	5.5	5.0	4.2	3.5	2.7	2.4	2.1
14	41.0	35.0	30.0	21.0	20.0	18.0	17.0	17.0	10.0	8.3	5.0	5.0	4.4	3.6	2.7	0.0	0.0	0.0	0.0	0.0
15	40.0	34.0	27.5	20.0	15.0	14.0	15.0	15.0	7.0	3.7	2.0	2.4	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	40.0	32.0	22.0	16.0	14.0	13.0	12.0	12.0	3.3	2.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	37.0	30.0	20.0	14.0	11.0	11.0	10.0	10.0	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	32.0	25.0	18.0	12.0	10.0	10.0	8.0	8.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	30.0	20.0	14.0	11.0	9.0	8.0	5.0	4.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	25.0	12.5	16.0	10.0	8.0	6.0	4.0	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	15.0	10.0	9.0	9.0	7.0	4.9	3.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	11.0	9.0	8.0	7.0	6.0	4.8	2.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	9.5	8.0	7.0	6.0	5.8	4.7	2.4	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	8.4	7.7	6.9	6.0	5.6	4.6	2.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	8.7	7.5	6.9	6.0	5.4	4.6	2.3	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	8.6	7.5	6.9	5.7	5.2	4.5	2.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	8.5	7.5	6.9	5.6	5.0	4.3	2.2	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	8.5	7.5	6.9	5.5	4.9	4.2	2.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	8.5	7.5	6.9	5.4	4.8	4.0	1.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	8.5	7.5	6.9	5.3	4.7	3.8	1.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	8.4	7.5	6.9	5.2	4.6	3.5	1.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	8.4	7.5	6.9	5.1	4.5	3.5	1.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	8.3	7.5	6.8	5.0	4.5	3.4	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	8.2	7.5	6.7	5.0	4.4	3.3	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35	8.1	7.4	6.5	5.0	4.1	3.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36	8.0	7.3	6.4	4.9	4.1	2.9	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37	7.8	7.2	6.3	4.8	4.0	2.8	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
38	7.6	7.1	6.2	4.7	3.9	2.7	1.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	7.4	7.1	6.1	4.6	3.8	2.6	1.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40	7.3	7.0	6.1	4.5	3.7	2.5	1.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

INITIAL LAT(CLAD1) IS 4.35 INITIAL LONGITUDE (CLOD) IS 176.99 BASEMENT AGE(AGEB) IS 130.0
DEPTH OF WATER IS 6130.00 SITE NUMBER IS 65

PDEPH = 5919.05 DEPH= 6130.00 DEPHC = 210.95

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
4.10	177.76	1.0	6132	0.1	2.4	3.5	3.5	39	16	1	1.490	0.5	0.5	1.9	79	0	0	0	100
3.86	178.54	2.0	6134	0.2	2.4	3.2	6.7	39	17	1	1.490	0.6	0.7	1.7	71	0	0	0	100
3.61	179.31	3.0	6135	0.2	2.5	3.1	9.8	39	17	1	1.490	1.0	0.9	1.7	66	0	0	0	100
3.36	-179.92	4.0	6137	0.2	2.8	3.2	13.0	39	17	1	1.490	1.0	1.2	1.6	57	0	0	0	-70
3.11	-179.15	5.0	6139	0.2	3.1	3.0	16.0	39	17	1	1.490	1.6	1.4	1.6	53	1	1	0	-247
2.86	-178.37	6.0	6140	0.2	2.9	2.5	18.6	39	18	1	1.490	1.7	1.8	1.1	38	1	1	-1	-451
2.61	-177.60	7.0	6141	0.2	3.2	2.3	20.9	39	18	1	1.490	2.2	2.0	1.2	36	1	1	-1	-377
2.36	-176.83	8.0	6142	0.2	3.8	2.2	23.1	39	18	1	1.490	2.2	2.3	1.4	38	1	1	-1	-341
2.11	-176.06	9.0	6143	0.3	4.1	2.9	26.0	39	18	1	1.490	2.6	2.5	1.7	40	1	1	-1	-294
1.86	-175.29	10.0	6144	0.3	4.5	4.0	30.1	39	19	1	1.490	2.6	2.1	2.4	54	1	1	-1	-249
1.61	-174.52	11.0	6147	0.3	5.6	4.9	35.0	39	19	1	1.490	1.1	1.6	4.0	71	1	1	-1	-211
1.36	-173.75	12.0	6150	0.4	6.1	5.1	40.1	39	19	1	1.490	1.2	0.9	5.2	85	1	1	-1	-141
1.11	-172.98	13.0	6153	0.5	6.7	5.6	45.7	39	19	1	1.490	0.4	0.7	6.1	90	1	1	-1	-105
0.86	-172.21	14.0	6156	0.6	6.3	5.3	50.9	39	20	1	1.490	0.4	0.7	5.7	89	1	1	0	-19
0.61	-171.44	15.0	6159	0.7	6.4	5.2	56.1	39	20	1	1.491	1.2	0.9	5.5	85	0	1	0	1
0.36	-170.67	16.0	6161	0.6	6.7	5.3	61.5	39	20	1	1.492	1.2	1.4	5.3	79	1	1	0	-58
0.11	-169.90	17.0	6163	0.6	6.3	4.9	66.4	39	20	1	1.493	1.8	1.6	4.7	75	2	2	-1	-179
-0.14	-169.13	18.0	6165	0.6	6.5	4.8	71.2	39	21	1	1.494	1.8	2.0	4.5	69	2	2	-1	-199
-0.39	-168.36	19.0	6168	0.5	7.7	5.5	76.7	39	21	1	1.495	2.4	2.2	5.5	71	1	1	-1	-154
-0.64	-167.59	20.0	6172	0.5	9.5	6.6	83.3	39	21	1	1.497	2.5	2.5	7.0	73	1	1	0	-100
-0.89	-166.82	21.0	6175	0.5	10.2	7.1	90.4	39	21	1	1.498	2.7	2.5	7.7	75	1	1	-1	-112
-1.13	-166.05	22.0	6179	0.5	10.6	7.2	97.6	39	22	1	1.500	2.3	2.7	7.9	75	1	1	-1	-112
-1.38	-165.27	23.0	6182	0.4	10.7	7.2	104.8	39	22	1	1.501	3.0	2.9	7.8	73	1	1	0	-57
-1.63	-164.50	24.0	6185	0.4	9.9	6.5	111.3	39	22	1	1.502	3.4	2.2	7.7	78	0	0	0	21
-1.88	-163.73	25.0	6185	0.4	7.9	5.1	116.4	39	22	1	1.503	0.2	1.2	6.7	84	0	0	0	100
-2.12	-162.96	26.0	6185	0.3	6.8	4.5	120.9	39	23	1	1.504	0.1	0.2	6.7	98	0	0	0	100
-2.37	-162.19	27.0	6184	0.3	6.7	4.3	125.2	39	23	1	1.505	0.2	0.2	6.5	97	0	0	0	100
-2.62	-161.41	28.0	6184	0.3	6.7	4.3	129.5	39	23	1	1.506	0.2	0.1	6.6	98	0	0	0	100
-2.86	-160.64	29.0	6182	0.2	5.9	3.7	133.2	39	23	1	1.507	0.0	0.1	5.8	98	0	0	0	100
-3.11	-159.87	30.0	6180	0.2	5.1	3.2	136.4	39	24	1	1.507	0.1	0.2	4.9	96	0	0	0	100
-3.35	-159.10	31.0	6177	0.2	4.0	2.5	138.9	39	24	1	1.508	0.5	0.4	3.7	91	0	0	0	100
-3.59	-158.32	32.0	6173	0.2	3.6	2.2	141.1	39	24	1	1.508	0.5	0.7	2.9	80	0	0	0	-94
-3.83	-157.55	33.0	6168	0.2	2.7	1.6	142.7	39	24	1	1.509	1.1	0.9	1.9	68	1	1	-1	-335
-4.07	-156.77	34.0	6163	0.1	2.4	1.4	144.1	39	25	1	1.509	1.0	1.1	1.2	52	1	1	-1	-609
-4.31	-156.00	35.0	6157	0.1	1.3	0.8	144.9	39	25	1	1.509	1.3	1.4	-0.1	-11	1	9	-9	****
-4.55	-155.22	36.0	6150	0.1	0.9	0.5	145.4	39	25	1	1.509	1.9	1.8	-0.9	-101	24	16	-16	****
-4.79	-154.44	37.0	6144	0.1	0.6	0.4	145.8	39	25	1	1.509	2.2	2.1	-1.5	-237	22	22	-22	****
-5.03	-153.67	38.0	6137	0.1	0.6	0.4	146.2	39	26	1	1.509	2.2	1.9	-1.3	-204	20	20	-20	****
-5.26	-152.89	39.0	6130	0.1	0.5	0.3	146.5	39	26	1	1.509	1.4	1.7	-1.2	-237	18	18	-18	****
-5.50	-152.11	40.0	6122	0.1	0.4	0.2	146.7	39	26	1	1.509	1.4	1.5	-1.1	-280	16	16	-16	****
-5.73	-151.33	41.0	6114	0.1	0.4	0.2	146.9	39	26	1	1.509	1.7	1.6	-1.2	-347	13	13	-13	****
-5.96	-150.55	42.0	6106	0.1	0.3	0.2	147.1	39	26	1	1.509	1.6	1.6	-1.3	-422	10	10	-10	****

INITIAL LAT(CLAD1) IS 2.39 INITIAL LONGITUDE (CLOD) IS -166.12 BASEMENT AGE(AGEB) IS 95.0
DEPTH OF WATER IS 5293.00 SITE NUMBER IS 66

PDEPH = 5800.19 DEPH= 5293.00 DEPHC = -507.19

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
2.14	-165.35	1.0	5293	0.6	5.5	7.6	7.6	30	18	1	1.490	1.5	1.5	4.0	73	0	0	1	100
1.89	-164.58	2.0	5293	0.6	4.8	5.6	13.2	30	19	1	1.490	1.5	1.6	3.2	67	0	0	1	100
1.65	-163.81	3.0	5291	0.6	4.6	4.4	17.6	30	19	1	1.490	1.7	1.6	3.0	65	0	0	0	48
1.40	-163.04	4.0	5288	0.7	4.9	3.6	21.2	30	19	1	1.490	1.7	1.6	3.1	64	1	1	0	7
1.15	-162.27	5.0	5284	0.7	5.2	2.8	24.0	30	19	1	1.490	1.9	1.8	3.4	65	1	1	0	-37
0.91	-161.50	6.0	5279	0.7	4.9	4.4	28.4	30	20	1	1.490	1.9	1.9	3.0	62	1	1	0	8
0.66	-160.73	7.0	5275	0.9	5.2	4.6	32.9	30	20	1	1.490	1.8	1.9	3.3	63	0	0	1	61
0.42	-159.97	8.0	5272	0.8	6.0	5.1	38.1	30	20	1	1.490	2.1	2.5	3.5	58	0	0	1	100
0.19	-159.19	9.0	5268	0.7	6.3	5.2	43.3	30	20	1	1.490	3.7	3.1	3.1	50	0	0	1	100
-0.07	-158.42	10.0	5264	0.7	6.6	5.5	48.8	30	21	1	1.490	3.6	3.4	3.3	49	0	0	1	100
-0.31	-157.65	11.0	5261	0.6	7.9	6.5	55.3	30	21	1	1.491	2.8	3.1	4.9	61	0	0	1	100
-0.55	-156.88	12.0	5258	0.6	8.2	6.5	61.8	30	21	1	1.492	2.8	2.7	5.5	67	0	0	0	48
-0.79	-156.11	13.0	5255	0.6	8.5	6.5	68.3	30	21	1	1.494	2.6	2.7	5.8	68	1	0	0	45
-1.03	-155.34	14.0	5250	0.6	7.5	5.5	73.8	30	22	1	1.495	2.7	2.4	5.1	68	0	0	0	42
-1.27	-154.57	15.0	5244	0.6	7.1	5.0	78.9	30	22	1	1.496	2.0	2.3	4.8	68	0	0	1	100
-1.50	-153.80	16.0	5237	0.5	7.0	4.8	83.7	30	22	1	1.497	2.1	2.3	4.7	67	0	0	1	100
-1.74	-153.02	17.0	5229	0.5	6.5	4.6	88.3	30	22	1	1.498	2.8	2.5	3.9	61	0	0	1	100
-1.97	-152.25	18.0	5222	0.5	6.4	4.4	92.7	30	22	1	1.499	2.7	2.7	3.7	57	0	0	0	100
-2.21	-151.48	19.0	5215	0.5	7.4	5.0	97.7	30	23	1	1.500	2.7	2.7	4.7	64	0	0	0	100
-2.44	-150.70	20.0	5208	0.5	9.0	6.0	103.7	30	23	1	1.501	2.7	2.5	6.5	72	0	0	0	100
-2.67	-149.93	21.0	5201	0.4	9.3	6.1	109.9	30	23	1	1.502	2.2	2.4	6.9	75	0	0	0	100
-2.90	-149.15	22.0	5193	0.4	9.2	5.9	115.8	29	23	1	1.503	2.2	2.2	7.0	76	0	0	0	100
-3.13	-148.38	23.0	5184	0.4	9.0	5.9	121.7	29	24	1	1.504	2.2	2.2	6.8	75	0	0	0	100
-3.36	-147.60	24.0	5175	0.3	8.0	5.2	126.9	29	24	1	1.505	2.2	2.3	5.7	71	0	0	0	100
-3.58	-146.82	25.0	5163	0.3	6.3	4.0	130.9	29	24	1	1.506	2.5	2.5	3.8	60	0	0	0	100
-3.81	-146.05	26.0	5150	0.3	5.5	3.5	134.4	29	24	1	1.507	2.8	2.3	3.2	58	0	0	0	100
-4.03	-145.27	27.0	5137	0.4	5.5	3.4	137.8	29	25	1	1.508	1.6	2.0	3.4	63	0	0	0	100
-4.25	-144.49	28.0	5124	0.4	5.6	3.4	141.2	29	25	1	1.508	1.7	1.4	4.2	75	0	0	0	100
-4.47	-143.71	29.0	5110	0.5	5.2	3.1	144.3	29	25	1	1.509	0.9	1.2	4.0	77	0	0	1	100
-4.68	-142.93	30.0	5095	0.6	4.7	2.8	147.1	28	25	1	1.509	0.9	0.8	3.8	82	0	0	1	100
-4.90	-142.15	31.0	5078	0.5	3.8	2.3	149.5	28	25	1	1.510	0.7	0.8	3.1	80	0	0	1	100
-5.11	-141.37	32.0	5061	0.5	3.5	2.2	151.7	28	26	1	1.511	0.7	0.7	2.8	79	0	0	0	100
-5.33	-140.58	33.0	5043	0.3	2.7	1.7	153.4	28	26	1	1.511	0.8	0.8	2.0	72	0	0	0	100
-5.54	-139.80	34.0	5025	0.2	2.4	1.5	154.8	28	26	1	1.512	0.8	0.8	1.6	66	0	0	0	100
-5.75	-139.02	35.0	5004	0.2	1.2	0.7	155.6	28	26	1	1.512	0.8	0.8	0.4	30	0	0	0	100
-5.95	-138.23	36.0	4983	0.1	0.8	0.5	156.0	27	26	1	1.512	0.9	0.9	-0.1	-9	0	0	0	100
-6.16	-137.45	37.0	4962	0.1	0.5	0.3	156.4	27	27	1	1.513	0.9	0.9	-0.4	-72	0	0	0	100
-6.36	-136.66	38.0	4940	0.1	0.5	0.3	156.7	27	27	1	1.513	0.9	0.9	-0.4	-86	0	0	0	100
-6.56	-135.87	39.0	4917	0.0	0.4	0.2	156.9	27	27	1	1.513	1.0	1.0	-0.6	-156	0	0	0	100
-6.76	-135.08	40.0	4894	0.0	0.3	0.2	157.1	26	27	1	1.513	1.0	1.0	-0.7	-202	0	0	0	100
-6.96	-134.30	41.0	4870	0.0	0.3	0.2	157.3	26	27	1	1.513	1.0	1.0	-0.7	-215	0	0	0	100
-7.15	-133.51	42.0	4845	0.0	0.3	0.2	157.5	26	28	1	1.513	1.1	1.1	-0.8	-237	0	0	0	100

INITIAL LAT(CLAD1) IS 16.72 INITIAL LONGITUDE (CLOD) IS -164.17 BASEMENT AGE(AGEB) IS 100.0
DEPTH OF WATER IS 5467.00 SITE NUMBER IS 68

PDEPH = 5829.92 DEPH= 5467.00 DEPHC = -362.92

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
16.47	-163.41	1.0	5462	0.0	0.0	0.0	0.0	32	4	1	1.490	0.0	0.0	0.0	****	0	0	0	****
16.23	-162.65	2.0	5456	0.0	0.0	0.0	0.0	32	4	1	1.490	0.0	0.0	0.0	****	0	0	0	****
15.98	-161.90	3.0	5450	0.0	0.0	0.0	0.0	32	5	1	1.490	0.0	0.0	0.0	****	0	0	0	****
15.74	-161.14	4.0	5444	0.0	0.0	0.0	0.0	32	5	1	1.490	0.0	0.0	0.0	****	0	0	0	****
15.49	-160.39	5.0	5437	0.0	0.0	0.0	0.0	32	5	1	1.490	0.0	0.0	0.0	****	0	0	0	****
15.25	-159.63	6.0	5431	0.0	0.0	0.0	0.0	32	5	1	1.490	0.0	0.0	0.0	****	0	0	0	****
15.00	-158.88	7.0	5424	0.0	0.0	0.0	0.0	32	5	1	1.490	0.0	0.0	0.0	****	0	0	0	****
14.76	-158.12	8.0	5416	0.0	0.0	0.0	0.0	32	6	1	1.490	0.0	0.0	0.0	****	0	0	0	****
14.52	-157.37	9.0	5409	0.0	0.0	0.0	0.0	32	6	1	1.490	0.0	0.0	0.0	****	0	0	0	****
14.28	-156.62	10.0	5401	0.0	0.0	0.0	0.0	32	6	1	1.490	0.0	0.0	0.0	****	0	0	0	****
14.04	-155.86	11.0	5393	0.0	0.0	0.0	0.0	31	6	1	1.490	0.0	0.0	0.0	****	0	0	0	****
13.80	-155.11	12.0	5385	0.0	0.0	0.0	0.0	31	7	1	1.490	0.0	0.0	0.0	****	0	0	0	****
13.56	-154.36	13.0	5376	0.0	0.0	0.0	0.0	31	7	1	1.490	0.0	0.0	0.0	****	0	0	0	****
13.33	-153.61	14.0	5367	0.0	0.0	0.0	0.0	31	7	1	1.490	0.0	0.0	0.0	****	0	0	0	****
13.09	-152.86	15.0	5358	0.0	0.0	0.0	0.0	31	7	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.86	-152.11	16.0	5348	0.0	0.0	0.0	0.0	31	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.62	-151.36	17.0	5338	0.0	0.0	0.0	0.0	31	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.39	-150.61	18.0	5328	0.0	0.0	0.0	0.0	31	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.16	-149.86	19.0	5317	0.0	0.0	0.0	0.0	31	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.93	-149.11	20.0	5306	0.0	0.0	0.0	0.0	31	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.70	-148.36	21.0	5295	0.0	0.0	0.0	0.0	30	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.48	-147.61	22.0	5283	0.0	0.0	0.0	0.0	30	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.25	-146.87	23.0	5271	0.0	0.0	0.0	0.0	30	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.03	-146.12	24.0	5258	0.0	0.0	0.0	0.0	30	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.80	-145.37	25.0	5245	0.0	0.0	0.0	0.0	30	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.58	-144.62	26.0	5231	0.0	0.0	0.0	0.0	30	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.36	-143.87	27.0	5217	0.0	0.0	0.0	0.0	30	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.15	-143.13	28.0	5203	0.0	0.0	0.0	0.0	30	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
9.93	-142.38	29.0	5188	0.0	0.0	0.0	0.0	29	11	1	1.490	0.0	0.0	0.0	****	0	0	0	****
9.71	-141.63	30.0	5173	0.0	0.0	0.0	0.0	29	11	1	1.490	0.0	0.0	0.0	****	0	0	0	****
9.50	-140.88	31.0	5157	0.0	0.0	0.0	0.0	29	11	1	1.490	0.0	0.0	0.0	****	0	0	0	****
9.29	-140.13	32.0	5141	0.0	0.0	0.0	0.0	29	11	1	1.490	0.0	0.0	0.0	****	0	0	0	100
9.08	-139.38	33.0	5124	0.0	0.0	0.0	0.0	29	11	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.87	-138.64	34.0	5107	0.1	0.0	0.0	0.0	29	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.67	-137.89	35.0	5089	0.1	0.0	0.0	0.0	28	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.46	-137.14	36.0	5071	0.1	0.0	0.0	0.0	28	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.26	-136.39	37.0	5052	0.1	0.0	0.0	0.0	28	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.06	-135.64	38.0	5033	0.1	0.0	0.0	0.0	28	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.86	-134.89	39.0	5013	0.0	0.0	0.0	0.0	28	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.67	-134.14	40.0	4992	0.0	0.0	0.0	0.0	27	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.47	-133.40	41.0	4971	0.0	0.0	0.0	0.0	27	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.28	-132.65	42.0	4950	0.0	0.0	0.0	0.0	27	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100

INITIAL LAT(CLAD1) IS 6.00 INITIAL LONGITUDE (CLOD) IS -152.86 BASEMENT AGE(AGEB) IS 87.0
DEPTH OF WATER IS 4978.00 SITE NUMBER IS 69

PDEPH = 5738.99 DEPH= 4978.00 DEPHC = -760.99

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
5.77	-152.10	1.0	4970	0.6	0.6	0.9	0.9	27	15	1	1.490	0.0	0.0	0.6	100	0	0	1	100
5.53	-151.34	2.0	4961	0.7	0.7	1.0	1.9	27	15	1	1.490	0.0	0.0	0.7	100	0	0	1	100
5.30	-150.58	3.0	4953	2.0	1.0	1.5	3.4	27	15	1	1.490	0.0	0.0	1.0	100	0	0	2	100
5.07	-149.81	4.0	4945	4.0	1.5	2.1	5.5	27	15	1	1.490	0.0	0.0	1.5	100	0	0	4	100
4.84	-149.05	5.0	4938	6.6	2.0	2.6	8.1	27	16	1	1.490	0.0	0.0	2.0	100	0	0	7	100
4.61	-148.29	6.0	4930	9.5	2.3	2.7	10.8	27	16	1	1.490	0.0	0.0	2.3	100	0	0	9	100
4.39	-147.53	7.0	4922	13.9	2.7	2.9	13.7	27	16	1	1.490	0.0	0.0	2.7	100	0	0	14	100
4.16	-146.77	8.0	4914	15.1	3.2	3.1	16.9	27	16	1	1.490	0.0	0.6	2.6	82	0	3	12	78
3.94	-146.00	9.0	4906	15.7	3.6	2.9	19.8	27	17	1	1.490	1.8	1.2	2.4	66	10	7	9	58
3.71	-145.24	10.0	4897	16.9	4.1	2.6	22.4	26	17	1	1.490	1.9	1.9	2.2	53	10	10	7	41
3.49	-144.48	11.0	4888	18.2	5.1	3.3	25.8	26	17	1	1.490	2.0	2.0	3.2	62	10	11	7	40
3.27	-143.72	12.0	4879	23.8	5.6	5.0	30.8	26	17	1	1.490	2.0	2.0	3.6	65	13	10	14	59
3.06	-142.95	13.0	4871	27.7	6.3	5.5	36.3	26	17	1	1.490	1.9	2.0	4.3	68	6	14	14	50
2.84	-142.19	14.0	4862	32.3	6.0	5.1	41.4	26	18	1	1.490	2.1	1.8	4.3	71	23	11	21	66
2.63	-141.42	15.0	4853	39.3	6.2	5.1	46.5	26	18	1	1.490	1.3	1.6	4.6	74	4	9	30	76
2.41	-140.66	16.0	4844	39.6	6.7	5.6	52.1	26	18	1	1.490	1.5	1.0	5.7	85	1	2	38	95
2.20	-139.89	17.0	4834	41.0	6.6	5.3	57.4	26	18	1	1.491	0.3	0.7	5.9	90	1	19	22	53
2.00	-139.13	18.0	4824	42.7	7.0	5.5	62.9	26	19	1	1.493	0.2	1.8	5.2	74	56	38	5	11
1.79	-138.36	19.0	4815	45.4	8.7	6.6	69.5	26	19	1	1.494	4.9	2.6	6.1	70	57	57	-12	-26
1.58	-137.60	20.0	4808	47.8	11.3	8.2	77.7	26	19	1	1.496	2.7	4.9	6.4	57	59	59	-11	-24
1.38	-136.83	21.0	4800	47.9	12.9	9.0	86.7	25	19	1	1.497	7.2	6.0	7.0	54	61	61	-13	-27
1.18	-136.06	22.0	4792	50.7	14.4	9.9	96.6	25	19	1	1.499	8.0	7.6	6.8	47	63	63	-12	-24
0.98	-135.30	23.0	4785	48.5	15.6	10.4	107.0	25	20	1	1.501	7.7	7.7	7.9	51	64	62	-13	-27
0.78	-134.53	24.0	4776	53.5	15.6	10.1	117.1	25	20	1	1.503	7.4	7.4	8.2	53	58	64	-11	-20
0.59	-133.76	25.0	4765	53.5	13.6	8.9	126.0	25	20	1	1.505	7.1	7.6	6.0	44	71	67	-14	-25
0.40	-132.99	26.0	4753	56.3	12.3	7.8	133.8	25	20	1	1.507	8.2	8.2	4.1	33	72	74	-17	-31
0.20	-132.22	27.0	4740	57.0	12.0	7.4	141.2	25	20	1	1.508	9.3	9.1	2.9	24	78	73	-16	-28
0.02	-131.45	28.0	4727	57.0	12.1	7.3	148.5	25	20	1	1.510	9.7	9.7	2.4	20	69	69	-12	-22
-0.17	-130.68	29.0	4711	56.3	10.7	6.7	155.2	25	21	1	1.512	10.2	9.8	0.9	8	61	55	1	2
-0.35	-129.91	30.0	4694	55.8	9.2	5.6	160.8	24	21	1	1.514	9.5	8.3	0.9	9	36	47	9	15
-0.54	-129.14	31.0	4675	54.7	7.1	4.2	165.1	24	21	1	1.516	5.3	6.7	0.4	6	45	45	10	18
-0.71	-128.37	32.0	4655	53.2	6.5	3.8	168.8	24	21	1	1.518	5.3	5.7	0.9	13	54	50	4	7
-0.89	-127.59	33.0	4633	49.0	5.2	3.0	171.8	24	21	1	1.519	6.4	5.6	-0.4	-7	50	53	-4	-9
-1.07	-126.82	34.0	4611	47.2	4.7	2.7	174.4	24	22	1	1.520	5.0	4.9	-0.2	-5	56	35	12	25
-1.24	-126.05	35.0	4586	39.8	2.6	1.5	175.9	23	22	1	1.520	3.4	3.7	-1.1	-42	0	19	21	53
-1.41	-125.27	36.0	4560	24.4	1.9	1.1	177.0	23	22	1	1.521	2.8	2.6	-0.7	-34	0	0	24	100
-1.57	-124.50	37.0	4490	25.4	1.5	0.8	177.8	22	22	1	1.521	1.6	1.9	-0.3	-22	0	0	25	100
-1.74	-123.72	38.0	4458	21.4	1.7	1.0	178.8	22	22	1	1.522	1.2	1.1	0.7	39	0	0	21	100
-1.90	-122.94	39.0	4426	16.9	1.5	0.9	179.7	22	22	1	1.522	0.4	1.3	0.2	16	0	0	17	100
-2.06	-122.17	40.0	4394	15.2	1.3	0.8	180.5	21	23	1	1.522	2.2	1.3	0.1	6	0	0	15	100
-2.22	-121.39	41.0	4362	16.0	1.4	0.8	181.3	21	23	1	1.523	1.2	1.5	-0.2	-12	0	0	16	100
-2.37	-120.61	42.0	4331	16.7	1.6	0.9	182.2	21	23	1	1.523	1.2	1.2	0.4	23	0	0	17	100

INITIAL LAT(CLAD1) IS 6.34 INITIAL LONGITUDE (CLOD) IS -140.36 BASEMENT AGE(ACEB) IS 60.0
DEPTH OF WATER IS 5029.00 SITE NUMBER IS 70

PDEPH = 5355.22 DEPH= 5029.00 DEPHC = -326.22

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
6.13	-139.60	1.0	5008	0.2	0.3	0.5	0.5	28	14	1	1.490	0.6	0.6	-0.3	-95	0	0	0	100
5.92	-138.85	2.0	4987	0.4	0.4	0.6	1.1	27	15	1	1.490	0.6	0.7	-0.3	-73	0	0	0	100
5.72	-138.09	3.0	4966	0.5	0.5	0.7	1.8	27	15	1	1.490	0.9	0.8	-0.3	-57	0	0	1	100
5.51	-137.34	4.0	4944	0.8	0.7	1.0	2.8	27	15	1	1.490	0.9	0.8	-0.1	-19	0	0	1	100
5.31	-136.58	5.0	4922	3.1	1.2	1.6	4.4	27	15	1	1.490	0.6	0.7	0.5	39	0	2	1	26
5.11	-135.82	6.0	4899	7.0	1.5	1.9	6.3	26	15	1	1.490	0.6	0.7	0.8	52	7	7	0	0
4.91	-135.07	7.0	4877	14.6	1.9	2.4	8.7	26	16	1	1.490	0.9	0.8	1.1	58	14	15	0	0
4.71	-134.31	8.0	4855	22.3	2.5	3.0	11.7	26	16	1	1.490	0.9	0.9	1.6	63	23	20	2	10
4.52	-133.55	9.0	4832	29.7	3.1	3.2	14.9	26	16	1	1.490	1.0	0.9	2.1	69	23	15	14	48
4.33	-132.79	10.0	4764	41.0	3.5	3.2	18.1	25	16	1	1.490	0.9	1.5	2.0	57	0	25	16	40
4.14	-132.04	11.0	4736	43.4	4.5	3.3	21.3	25	16	1	1.490	2.6	2.1	2.3	52	51	34	10	22
3.95	-131.28	12.0	4707	51.4	5.0	2.6	24.0	25	17	1	1.490	2.9	3.2	1.8	36	50	52	0	0
3.76	-130.52	13.0	4678	57.6	5.7	5.1	29.1	24	17	1	1.490	4.0	3.5	2.2	38	54	55	3	4
3.58	-129.76	14.0	4650	65.6	5.5	4.8	33.9	24	17	1	1.490	3.7	3.3	2.3	41	61	46	19	29
3.40	-129.00	15.0	4623	71.8	6.4	5.5	39.4	24	17	1	1.490	2.1	2.6	3.8	59	24	39	32	45
3.22	-128.24	16.0	4597	68.7	7.8	6.5	45.8	23	17	1	1.490	2.0	2.5	5.4	68	33	30	39	57
3.04	-127.48	17.0	4572	71.9	8.6	7.1	52.9	23	17	1	1.491	3.3	3.5	5.1	60	32	50	22	31
2.87	-126.72	18.0	4547	75.7	10.0	8.0	60.9	23	18	1	1.492	5.1	6.9	3.0	31	84	66	9	12
2.70	-125.96	19.0	4525	80.3	13.1	10.0	70.9	23	18	1	1.494	12.4	10.3	2.9	22	83	64	-3	-4
2.53	-125.19	20.0	4505	84.3	17.9	12.6	83.5	23	18	1	1.497	13.3	18.2	-0.3	-2	84	83	1	1
2.36	-124.43	21.0	4486	84.0	20.5	14.2	97.6	22	18	1	1.500	28.8	23.2	-2.7	-13	83	87	-3	-3
2.20	-123.67	22.0	4468	88.5	22.8	15.1	112.7	22	18	1	1.503	27.6	27.7	-5.0	-22	93	84	4	5
2.04	-122.90	23.0	4451	83.6	24.7	16.0	128.7	22	18	1	1.506	26.8	26.9	-2.2	-9	77	80	4	4
1.88	-122.14	24.0	4434	90.0	24.7	15.3	144.0	22	19	1	1.509	26.3	24.3	0.4	1	70	75	15	17
1.72	-121.38	25.0	4414	86.0	21.4	13.1	157.2	22	19	1	1.513	19.9	22.0	-0.6	-3	78	75	11	12
1.57	-120.61	26.0	4393	87.0	20.1	12.0	169.1	21	19	1	1.518	19.9	21.8	-1.7	-8	78	79	8	9
1.41	-119.85	27.0	4373	86.4	21.5	12.2	181.3	21	19	1	1.523	25.5	23.9	-2.5	-12	81	80	6	7
1.26	-119.08	28.0	4353	85.0	24.4	14.0	195.3	21	19	1	1.528	26.4	30.1	-5.7	-23	82	82	3	4
1.12	-118.32	29.0	4334	82.8	25.2	13.7	208.9	21	19	1	1.537	38.3	34.4	-9.2	-36	83	82	1	1
0.98	-117.55	30.0	4314	81.6	26.1	13.9	222.8	21	20	1	1.548	38.6	37.6	-11.5	-44	80	83	-1	-1
0.83	-116.78	31.0	4294	80.5	24.6	13.1	235.9	20	20	1	1.559	35.9	35.4	-10.8	-44	85	78	2	3
0.70	-116.01	32.0	4274	82.0	25.7	13.4	249.3	20	20	1	1.569	31.7	28.6	-3.0	-12	70	78	4	5
0.56	-115.25	33.0	4252	80.4	22.7	12.2	261.5	20	20	1	1.577	18.3	23.8	-1.1	-5	79	74	6	8
0.43	-114.48	34.0	4230	83.9	21.5	11.0	272.5	20	20	1	1.583	21.3	14.9	6.6	31	73	76	8	10
0.30	-113.71	35.0	4199	77.9	12.3	6.1	278.6	19	20	1	1.587	5.0	10.4	1.8	15	75	75	3	3
0.17	-112.94	36.0	4173	53.6	9.2	4.6	283.2	19	20	1	1.590	5.0	3.3	5.9	64	78	51	3	5
0.05	-112.17	37.0	4140	49.8	6.9	3.7	286.8	19	20	1	1.592	0.0	1.7	5.2	76	0	26	24	48
-0.07	-111.40	38.0	4105	41.5	7.4	4.1	291.0	19	21	1	1.595	0.0	0.0	7.4	100	0	0	41	100
-0.19	-110.63	39.0	4065	32.5	6.1	3.4	294.3	18	21	1	1.597	0.0	0.0	6.1	100	0	0	32	100
-0.30	-109.86	40.0	4022	28.7	5.4	3.0	297.3	18	21	1	1.598	0.0	0.0	5.4	100	0	0	29	100
-0.41	-109.08	41.0	3979	29.2	5.5	2.8	300.1	17	21	1	1.600	0.0	0.0	5.5	100	0	0	29	100
-0.52	-108.31	42.0	3934	29.7	5.6	2.8	302.9	17	21	1	1.602	0.0	0.0	5.6	100	0	0	30	100

INITIAL LAT(CLAD1) IS 4.47 INITIAL LONGITUDE (CLOD) IS -140.31 BASEMENT AGE(ACES) IS 60.0
DEPTH OF WATER IS 4419.00 SITE NUMBER IS 71

PDEPH = 5355.22 DEPH= 4419.00 DEPHC = -936.22

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	BOPH	AV	DIFF	PCT	CA	AV	DIP	PCT
4.26	-139.55	1.0	4404	56.1	5.7	7.8	7.8	22	16	1	1.490	3.0	3.0	2.7	47	67	67	-11	-19
4.05	-138.79	2.0	4391	61.4	5.7	6.4	14.3	21	16	1	1.490	3.0	3.5	2.2	39	63	63	-2	-3
3.85	-138.03	3.0	4375	59.4	6.2	5.4	19.7	21	17	1	1.490	4.5	4.0	2.2	35	60	62	-3	-5
3.64	-137.27	4.0	4359	65.3	7.3	4.2	23.9	21	17	1	1.490	4.5	5.0	2.3	31	64	62	3	5
3.44	-136.51	5.0	4341	66.7	8.6	7.6	31.5	21	17	1	1.490	6.0	5.3	3.3	38	63	62	5	7
3.24	-135.75	6.0	4324	64.6	8.8	7.6	39.1	21	17	1	1.490	5.5	6.4	2.5	28	59	61	4	6
3.04	-134.98	7.0	4308	76.4	10.1	8.4	47.5	21	17	1	1.490	7.6	7.1	3.0	30	60	66	11	14
2.85	-134.22	8.0	4293	75.3	12.4	10.1	57.6	20	18	1	1.492	8.3	10.0	2.4	20	78	73	2	3
2.65	-133.46	9.0	4278	71.5	14.0	10.8	68.5	20	18	1	1.494	14.1	12.3	1.7	12	82	77	-6	-8
2.46	-132.70	10.0	4220	70.9	17.2	12.3	80.7	20	18	1	1.496	14.5	17.3	-0.1	-1	72	77	-6	-9
2.27	-131.93	11.0	4203	70.0	22.4	15.5	96.2	20	18	1	1.499	23.3	21.5	0.8	4	77	77	-7	-10
2.08	-131.17	12.0	4187	78.3	25.2	16.6	112.8	19	18	1	1.503	26.8	43.0	-17.9	-71	82	82	-3	-4
1.90	-130.40	13.0	4174	80.0	29.1	18.8	131.7	19	19	1	1.506	79.0	61.9	-32.8	-113	86	83	-3	-4
1.71	-129.64	14.0	4159	81.7	26.5	17.4	149.1	19	19	1	1.510	80.0	69.2	-40.7	-143	82	83	-1	-2
1.53	-128.87	15.0	4145	87.6	29.8	18.1	167.2	19	19	1	1.517	48.6	58.3	-28.5	-96	81	81	7	8
1.35	-128.11	16.0	4132	82.5	32.6	18.7	185.9	19	19	1	1.524	46.4	38.0	-5.3	-16	80	82	0	0
1.18	-127.34	17.0	4118	84.2	32.6	18.1	204.0	19	19	1	1.533	18.9	28.4	4.2	13	86	84	0	0
1.00	-126.57	18.0	4105	85.8	34.9	18.6	222.6	19	19	1	1.548	20.0	19.2	15.8	45	87	87	-1	-2
0.83	-125.81	19.0	4097	89.2	43.3	22.7	245.3	18	20	1	1.566	18.6	19.1	24.3	56	89	88	1	1
0.66	-125.04	20.0	4095	91.7	56.1	29.5	274.8	18	20	1	1.585	18.6	24.8	31.3	56	89	89	3	3
0.50	-124.27	21.0	4096	90.7	63.0	32.6	307.3	18	20	1	1.606	37.2	31.6	31.4	50	88	87	4	4
0.33	-123.50	22.0	4095	94.2	62.8	31.3	338.6	18	20	1	1.631	38.9	46.5	16.3	26	83	84	10	10
0.17	-122.73	23.0	4092	87.6	61.1	29.7	368.3	18	20	1	1.662	63.3	55.2	5.9	10	82	85	3	3
0.01	-121.96	24.0	4084	92.9	54.8	28.5	396.7	18	20	1	1.696	63.5	55.4	-0.5	-1	89	86	7	7
-0.14	-121.19	25.0	4071	87.5	42.9	21.6	418.3	18	21	1	1.726	39.3	47.8	-4.8	-11	87	88	-1	-1
-0.30	-120.42	26.0	4055	87.3	36.6	17.6	435.9	18	21	1	1.750	40.5	45.0	-8.4	-23	89	88	0	0
-0.45	-119.65	27.0	4039	86.5	35.6	16.8	452.7	18	21	1	1.774	55.3	49.9	-14.3	-40	87	87	0	0
-0.59	-118.88	28.0	4023	86.1	36.9	16.3	469.1	18	21	1	1.797	53.9	49.9	-12.9	-35	84	84	2	2
-0.74	-118.10	29.0	4004	85.1	34.6	12.4	481.4	18	21	1	1.814	40.4	44.9	-10.3	-30	82	82	3	4
-0.88	-117.33	30.0	3982	85.0	32.4	13.0	494.4	17	21	1	1.832	40.4	35.3	-2.8	-9	80	80	5	6
-1.02	-116.56	31.0	3957	84.8	27.7	11.7	506.1	17	22	1	1.850	25.0	30.9	-3.2	-12	78	78	7	8
-1.16	-115.78	32.0	3934	87.2	25.9	11.3	517.4	17	22	1	1.868	27.3	23.0	2.8	11	76	76	11	13
-1.29	-115.01	33.0	3909	86.4	20.4	7.6	525.0	17	22	1	1.880	16.8	20.3	0.0	0	74	74	12	14
-1.42	-114.23	34.0	3882	91.1	18.2	7.3	532.3	16	22	1	1.892	16.9	13.7	4.5	25	72	72	19	21
-1.55	-113.46	35.0	3847	85.4	10.1	4.7	537.0	16	22	1	1.899	7.4	10.6	-0.5	-5	70	70	15	18
-1.68	-112.68	36.0	3820	58.4	7.4	3.4	540.4	16	22	1	1.905	7.4	5.6	1.8	24	68	68	-10	-16
-1.80	-111.90	37.0	3786	53.9	5.6	2.6	543.0	15	22	1	1.909	2.1	4.6	1.0	17	66	66	-12	-22
-1.92	-111.12	38.0	3750	45.0	6.3	2.9	545.9	15	22	1	1.913	4.3	3.9	2.3	37	64	64	-19	-42
-2.04	-110.35	39.0	3709	35.2	5.3	2.4	548.3	15	23	1	1.917	5.4	5.0	0.3	5	62	62	-27	-76
-2.15	-109.57	40.0	3666	30.8	4.7	2.2	550.4	14	23	1	1.921	5.4	4.3	0.4	9	60	60	-29	-94
-2.26	-108.79	41.0	3621	31.1	4.7	1.7	552.2	14	23	1	1.923	2.1	3.2	1.5	33	58	58	-27	-87
-2.37	-108.01	42.0	3575	31.3	4.7	1.4	553.6	13	23	1	1.926	2.1	2.1	2.6	56	56	56	-25	-79

INITIAL LAT(CLAD1) IS 0.44 INITIAL LONGITUDE (CLOD) IS -138.67 BASEMENT AGE(AGEB) IS 57.0
DEPTH OF WATER IS 4326.00 SITE NUMBER IS 72

PDEPH = 5290.13 DEPH= 4326.00 DEPHC = -964.13

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
0.23	-138.10	1.0	4322	81.1	22.1	22.6	22.6	21	20	1	1.490	14.2	14.2	7.9	36	81	81	0	0
0.03	-137.33	2.0	4318	80.0	17.2	14.0	36.6	21	20	1	1.490	14.6	15.5	1.7	10	80	80	0	0
-0.17	-136.56	3.0	4307	70.9	15.1	12.6	49.2	21	21	1	1.490	17.6	16.5	-1.4	-9	80	76	-5	-7
-0.37	-135.79	4.0	4294	72.4	14.6	11.8	60.9	20	21	1	1.492	17.4	15.0	-0.4	-3	68	77	-4	-6
-0.57	-135.02	5.0	4280	69.5	14.4	10.9	71.9	20	21	1	1.494	10.0	12.5	2.0	14	82	77	-7	-10
-0.77	-134.25	6.0	4264	64.5	12.7	9.0	80.9	20	21	1	1.496	10.0	12.0	0.7	6	80	79	-14	-22
-0.96	-133.47	7.0	4203	76.0	14.2	9.9	90.8	20	21	1	1.498	16.1	14.3	-0.2	-1	75	77	-1	-1
-1.15	-132.70	8.0	4181	73.0	15.4	10.4	101.2	19	22	1	1.500	16.9	18.2	-2.7	-18	76	76	-3	-4
-1.34	-131.93	9.0	4159	67.8	15.7	10.4	111.6	19	22	1	1.502	21.5	21.1	-5.4	-35	77	77	-9	-14
-1.53	-131.15	10.0	4137	65.9	16.2	10.5	122.1	19	22	1	1.504	25.0	25.4	-9.2	-57	78	78	-12	-18
-1.72	-130.38	11.0	4116	64.9	19.1	12.2	134.3	19	22	1	1.507	29.7	28.2	-9.1	-48	79	79	-14	-22
-1.90	-129.60	12.0	4096	72.4	19.5	11.9	146.2	18	22	1	1.509	29.9	32.2	-12.7	-65	81	81	-9	-12
-2.08	-128.82	13.0	4076	73.8	20.6	12.7	158.8	18	23	1	1.514	37.0	34.7	-14.1	-69	84	83	-9	-12
-2.26	-128.05	14.0	4054	75.5	18.3	10.8	169.7	18	23	1	1.518	37.3	33.8	-15.4	-84	84	84	-9	-12
-2.43	-127.27	15.0	4032	80.5	17.4	9.8	179.5	18	23	1	1.522	27.0	30.5	-13.1	-76	85	85	-4	-5
-2.61	-126.49	16.0	4008	75.9	17.1	9.9	189.4	18	23	1	1.526	27.2	24.2	-7.1	-41	85	85	-9	-12
-2.78	-125.71	17.0	3984	78.1	15.5	8.7	198.1	17	23	1	1.529	18.3	21.4	-5.8	-38	85	85	-7	-9
-2.95	-124.93	18.0	3960	80.9	15.2	8.2	206.3	17	23	1	1.535	18.6	17.4	-2.1	-14	85	85	-4	-5
-3.11	-124.15	19.0	3936	85.4	17.4	9.3	215.6	17	24	1	1.542	15.2	16.4	1.0	6	85	85	1	1
-3.28	-123.37	20.0	3914	88.7	20.9	11.1	226.8	17	24	1	1.551	15.5	16.2	4.7	23	84	84	4	5
-3.44	-122.59	21.0	3892	89.6	21.7	11.4	238.2	16	24	1	1.561	17.8	17.2	4.6	21	84	84	5	5
-3.60	-121.81	22.0	3871	93.4	22.6	11.8	250.0	16	24	1	1.570	18.2	17.5	5.1	23	84	84	9	10
-3.75	-121.02	23.0	3850	88.0	23.4	12.5	262.5	16	24	1	1.578	16.5	17.1	6.3	27	85	85	3	3
-3.90	-120.24	24.0	3829	94.2	22.6	11.5	274.0	16	24	1	1.584	16.7	17.4	5.2	23	86	86	8	9
-4.05	-119.46	25.0	3805	89.6	18.8	9.3	283.3	16	25	1	1.590	19.0	18.3	0.5	3	87	87	3	3
-4.20	-118.67	26.0	3779	90.3	16.9	9.3	292.6	15	25	1	1.596	19.2	18.2	-1.3	-8	88	88	2	3
-4.35	-117.89	27.0	3755	90.2	16.8	8.9	301.5	15	25	1	1.601	16.3	17.3	-0.5	-3	89	89	2	2
-4.49	-117.10	28.0	3731	90.2	18.1	8.8	310.3	15	25	1	1.608	16.5	13.2	4.9	27	89	88	2	2
-4.63	-116.31	29.0	3706	88.6	18.0	7.9	318.1	15	25	1	1.615	6.7	9.9	8.1	45	87	89	-1	-1
-4.76	-115.52	30.0	3680	87.9	17.8	9.1	327.2	14	25	1	1.622	6.5	5.7	12.1	68	92	89	-1	-2
-4.90	-114.74	31.0	3655	87.0	16.0	9.0	336.2	14	25	1	1.629	4.0	4.8	11.2	70	89	89	-2	-2
-5.03	-113.95	32.0	3627	88.4	15.2	7.6	343.8	14	26	1	1.635	3.9	3.3	12.0	79	86	88	0	0
-5.15	-113.15	33.0	3603	86.2	12.3	6.0	349.8	14	26	1	1.640	1.9	2.6	9.7	79	90	88	-2	-2
-5.28	-112.37	34.0	3573	89.3	11.3	5.5	355.3	13	26	1	1.646	1.9	1.9	9.4	83	88	85	5	5
-5.40	-111.58	35.0	3534	82.3	6.5	3.2	358.4	13	26	1	1.650	1.9	1.9	4.6	71	76	81	1	2
-5.52	-110.79	36.0	3493	56.6	5.1	2.4	360.9	12	26	1	1.653	1.9	1.9	3.1	62	79	72	-16	-28
-5.63	-109.99	37.0	3449	52.7	3.9	1.9	362.7	12	26	1	1.655	2.0	1.6	2.3	58	62	61	-8	-15
-5.74	-109.20	38.0	3405	44.0	4.5	2.1	364.9	12	26	1	1.658	1.0	1.5	3.0	67	41	46	-2	-5
-5.85	-108.41	39.0	3359	34.4	3.9	1.9	366.7	11	26	1	1.660	1.4	0.8	3.1	80	36	26	9	25
-5.96	-107.61	40.0	3313	30.0	3.6	1.7	368.4	11	26	1	1.662	0.0	0.5	3.1	87	0	12	18	60
-6.06	-106.82	41.0	3266	30.0	3.7	1.8	370.2	10	27	1	1.664	0.0	0.0	3.7	100	0	0	30	100
-6.16	-106.02	42.0	3220	30.1	3.8	1.8	372.0	10	27	1	1.666	0.0	0.0	3.8	100	0	0	30	100

INITIAL LAT(CLAD1) IS -1.91   INITIAL LONGITUDE (CLOD) IS -137.47   BASEMENT AGE(AGEB) IS 54.0
DEPTH OF WATER IS 4387.00   SITE NUMBER IS 73

PDEPH = 5219.47   DEPH= 4387.00   DEPHC = -832.47

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
-2.11	-136.69	1.0	4371	49.9	7.6	10.2	10.2	21	23	1	1.490	15.5	15.5	-7.9	-103	79	79	-29	-58
-2.31	-135.92	2.0	4354	49.4	6.4	6.6	16.8	21	23	1	1.490	14.6	12.4	-6.0	-93	70	75	-25	-51
-2.51	-135.14	3.0	4335	43.7	6.5	4.9	21.7	21	23	1	1.490	7.0	9.4	-2.9	-44	75	72	-28	-64
-2.71	-134.36	4.0	4271	49.5	9.0	6.4	28.1	20	23	1	1.490	6.6	6.0	2.9	33	70	72	-23	-45
-2.90	-133.59	5.0	4245	49.7	9.2	8.0	36.1	20	23	1	1.490	4.5	5.1	4.1	45	71	63	-14	-27
-3.10	-132.81	6.0	4219	47.5	7.7	6.4	42.5	20	24	1	1.490	4.1	3.9	3.7	49	49	57	-9	-19
-3.29	-132.03	7.0	4192	55.7	7.4	6.1	48.6	19	24	1	1.490	3.2	3.8	3.6	48	50	50	6	11
-3.47	-131.25	8.0	4166	54.6	7.9	6.4	55.1	19	24	1	1.491	4.1	3.7	4.2	53	50	51	3	6
-3.66	-130.47	9.0	4140	53.1	8.1	6.4	61.5	19	24	1	1.492	3.7	3.5	4.6	57	54	47	6	12
-3.84	-129.69	10.0	4114	54.2	8.4	6.5	68.0	19	24	1	1.494	2.7	3.6	4.8	57	36	40	15	27
-4.02	-128.90	11.0	4089	55.8	9.9	7.2	75.2	18	25	1	1.495	4.5	5.1	4.9	49	29	47	9	16
-4.20	-128.12	12.0	4063	65.1	10.1	7.1	82.3	18	25	1	1.496	8.0	5.1	5.1	50	75	61	4	6
-4.38	-127.34	13.0	4038	68.6	10.8	7.6	89.8	18	25	1	1.498	2.7	4.5	6.3	59	79	76	-7	-11
-4.55	-126.55	14.0	4012	70.7	9.8	6.7	96.5	18	25	1	1.499	2.7	4.0	5.8	59	74	79	-8	-12
-4.72	-125.77	15.0	3985	75.4	9.8	6.5	103.0	17	25	1	1.501	6.6	5.5	4.3	44	84	78	-3	-4
-4.89	-124.98	16.0	3959	72.5	10.3	6.8	109.8	17	25	1	1.502	7.1	9.9	0.4	4	77	80	-7	-10
-5.06	-124.19	17.0	3932	75.2	10.1	6.5	116.3	17	26	1	1.503	15.9	18.4	-8.4	-83	79	79	-4	-5
-5.22	-123.41	18.0	3906	77.5	10.7	7.0	123.3	17	26	1	1.505	32.3	17.4	-6.8	-63	80	80	-3	-4
-5.38	-122.62	19.0	3882	81.8	13.1	8.4	131.7	16	26	1	1.506	4.1	19.1	-6.0	-46	82	82	0	0
-5.54	-121.83	20.0	3860	85.7	16.6	10.3	142.0	16	26	1	1.508	20.8	14.7	1.9	11	84	83	2	3
-5.70	-121.04	21.0	3837	85.9	18.2	11.1	153.0	16	26	1	1.511	19.3	19.9	-1.7	-9	84	84	2	2
-5.85	-120.25	22.0	3816	90.2	19.5	11.8	164.9	16	26	1	1.516	19.5	19.8	-0.3	-2	84	84	6	7
-6.00	-119.46	23.0	3795	84.7	20.5	11.7	176.6	15	26	1	1.521	20.6	21.0	-0.5	-2	84	84	0	0
-6.15	-118.67	24.0	3773	90.6	20.2	11.7	188.3	15	27	1	1.525	22.9	20.7	-0.5	-3	85	85	6	6
-6.29	-117.87	25.0	3749	85.9	17.5	9.8	198.0	15	27	1	1.529	18.7	20.2	-2.7	-15	86	86	0	0
-6.43	-117.08	26.0	3725	86.2	16.4	8.8	206.9	15	27	1	1.536	18.9	17.5	-1.1	-7	86	86	0	0
-6.57	-116.29	27.0	3700	85.7	17.1	9.1	216.0	15	27	1	1.543	14.8	16.2	0.9	5	87	86	-1	-1
-6.71	-115.49	28.0	3677	85.1	18.6	9.9	225.9	14	27	1	1.551	15.0	17.0	1.6	9	86	86	-1	-1
-6.84	-114.70	29.0	3650	83.6	18.0	9.5	235.5	14	27	1	1.558	21.3	19.1	-1.1	-6	85	86	-2	-2
-6.97	-113.90	30.0	3630	82.9	17.2	8.9	244.3	14	27	1	1.565	21.0	20.1	-2.9	-17	86	85	-2	-3
-7.10	-113.10	31.0	3602	82.3	15.1	8.1	252.5	14	28	1	1.571	18.0	18.6	-3.5	-23	84	85	-2	-3
-7.22	-112.31	32.0	3570	84.4	14.7	7.9	260.3	13	28	1	1.576	16.8	16.2	-1.5	-10	84	84	1	1
-7.34	-111.51	33.0	3533	83.2	12.1	6.2	266.6	13	28	1	1.580	13.8	14.9	-2.9	-24	83	82	1	2
-7.46	-110.71	34.0	3494	86.9	11.2	5.7	272.2	12	28	1	1.583	14.2	12.4	-1.2	-11	78	78	9	10
-7.58	-109.91	35.0	3448	80.7	6.3	3.2	275.4	12	28	1	1.585	9.2	10.8	-4.5	-71	73	69	12	14
-7.69	-109.11	36.0	3402	55.5	4.8	2.4	277.8	12	28	1	1.587	9.0	8.0	-3.1	-65	56	49	7	12
-7.80	-108.31	37.0	3356	51.5	3.7	1.8	279.6	11	28	1	1.588	5.7	6.8	-3.1	-85	17	44	8	15
-7.90	-107.51	38.0	3310	43.0	4.1	2.0	281.6	11	28	1	1.589	5.7	4.6	-0.5	-12	58	48	-5	-12
-8.00	-106.70	39.0	3263	33.7	3.5	1.7	283.3	10	29	1	1.590	2.3	2.7	0.8	23	70	43	-9	-27
-8.10	-105.90	40.0	3216	29.4	3.1	1.6	284.9	10	29	1	1.591	0.0	0.8	2.4	75	0	23	6	21
-8.20	-105.10	41.0	3169	29.5	3.2	1.8	286.7	9	29	1	1.592	0.0	0.0	3.2	100	0	0	29	100
-8.29	-104.29	42.0	3122	29.6	3.2	1.8	288.5	9	29	1	1.593	0.0	0.0	3.2	100	0	0	30	100

INITIAL LAT(CLAD1) IS -6.23 INITIAL LONGITUDE (CLOD) IS -136.08 BASEMENT AGE(AGEB) IS 50.0
DEPTH OF WATER IS 4431.00 SITE NUMBER IS 74

PDEPH = 5071.66 DEPH= 4431.00 DEPHC = -640.56

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
-6.43	-135.29	1.0	4401	0.1	2.4	3.5	3.5	22	27	1	1.490	0.0	0.0	2.4	100	0	0	0	100
-6.63	-134.50	2.0	4372	0.1	2.0	2.7	6.2	21	27	1	1.490	0.0	0.0	2.0	100	0	0	0	100
-6.82	-133.72	3.0	4342	0.1	1.9	2.4	8.6	21	27	1	1.490	0.0	0.0	1.9	100	0	16	-16	****
-7.01	-132.93	4.0	4311	0.0	2.0	2.4	10.9	21	28	1	1.490	0.0	0.3	1.7	87	49	16	-16	****
-7.20	-132.14	5.0	4281	0.0	2.1	2.3	13.2	20	28	1	1.490	0.8	0.6	1.5	73	0	16	-16	****
-7.39	-131.34	6.0	4250	0.0	1.9	1.9	15.2	20	28	1	1.490	0.9	0.7	1.2	64	0	0	0	100
-7.58	-130.55	7.0	4220	0.0	2.0	1.8	17.0	20	28	1	1.490	0.4	0.6	1.4	69	0	0	0	****
-7.76	-129.76	8.0	4188	0.0	2.0	1.6	18.7	19	28	1	1.490	0.5	0.5	1.5	74	0	0	0	****
-7.94	-128.96	9.0	4157	0.0	1.7	1.3	20.0	19	28	1	1.490	0.6	0.6	1.1	67	0	0	0	****
-8.12	-128.17	10.0	4125	1.2	1.7	1.2	21.1	19	29	1	1.490	0.6	0.5	1.2	68	0	0	1	100
-8.30	-127.37	11.0	4093	1.5	1.7	1.0	22.2	18	29	1	1.490	0.4	0.5	1.2	72	0	0	1	100
-8.47	-126.58	12.0	4060	0.4	1.1	0.6	22.8	18	29	1	1.490	0.4	0.7	0.4	35	0	0	0	100
-8.64	-125.78	13.0	4028	9.0	1.1	0.6	23.3	18	29	1	1.490	1.3	1.0	0.1	10	0	0	9	96
-8.81	-124.98	14.0	3995	20.9	1.1	0.5	23.8	17	29	1	1.490	1.3	1.2	-0.2	-14	1	25	-4	-21
-8.98	-124.18	15.0	3962	33.0	1.1	0.8	24.6	17	29	1	1.490	1.1	1.3	-0.2	-19	75	47	-14	-44
-9.14	-123.38	16.0	3930	38.5	1.2	1.1	25.7	17	30	1	1.490	1.5	0.9	0.3	25	66	47	-9	-22
-9.30	-122.58	17.0	3898	47.0	1.4	1.2	27.0	16	30	1	1.490	0.2	0.7	0.7	49	0	22	25	53
-9.46	-121.78	18.0	3866	56.9	1.6	1.4	28.4	16	30	1	1.490	0.4	0.9	0.7	42	0	26	31	55
-9.62	-120.97	19.0	3835	65.7	2.2	2.0	30.4	16	30	1	1.490	2.2	1.4	0.9	39	77	53	13	19
-9.77	-120.17	20.0	3804	70.7	3.2	2.8	33.1	16	30	1	1.490	1.5	2.3	0.9	28	82	81	-10	-15
-9.92	-119.36	21.0	3774	73.1	3.7	3.2	36.3	15	30	1	1.490	3.1	3.2	0.5	15	84	82	-9	-12
-10.06	-118.56	22.0	3744	79.5	4.3	3.7	40.0	15	31	1	1.490	4.9	5.2	-0.9	-21	79	81	-2	-2
-10.21	-117.75	23.0	3716	76.5	5.6	4.6	44.6	15	31	1	1.490	7.7	6.4	-0.9	-16	81	80	-3	-5
-10.35	-116.94	24.0	3687	84.4	6.1	5.1	49.7	14	31	1	1.490	6.7	7.7	-1.6	-26	80	80	5	6
-10.49	-116.13	25.0	3656	83.3	5.7	4.7	54.4	14	31	1	1.491	8.8	7.7	-1.9	-34	78	78	5	6
-10.62	-115.32	26.0	3631	84.2	5.9	4.7	59.1	14	31	1	1.492	7.5	8.1	-2.3	-38	77	76	8	10
-10.76	-114.51	27.0	3601	83.7	6.8	5.3	64.4	14	31	1	1.493	8.1	7.2	-0.5	-7	73	75	8	10
-10.89	-113.70	28.0	3568	83.2	8.1	6.0	70.5	13	31	1	1.494	6.1	9.0	-1.0	-12	76	76	7	8
-11.01	-112.89	29.0	3532	82.0	8.1	5.8	76.3	13	32	1	1.495	12.9	10.6	-2.5	-31	80	78	4	5
-11.13	-112.08	30.0	3492	81.6	7.7	5.4	81.6	12	32	1	1.496	12.8	11.6	-3.9	-51	77	79	3	3
-11.25	-111.26	31.0	3450	81.2	6.8	4.7	86.4	12	32	1	1.497	9.2	10.3	-3.5	-52	80	80	2	2
-11.37	-110.45	32.0	3407	83.3	6.7	4.7	91.1	12	32	1	1.498	8.9	8.1	-1.3	-20	82	81	3	3
-11.49	-109.63	33.0	3363	82.0	5.6	3.8	94.9	11	32	1	1.499	6.1	7.0	-1.4	-24	80	67	15	19
-11.60	-108.82	34.0	3318	85.7	5.2	3.5	98.3	11	32	1	1.500	5.9	4.0	1.1	22	38	52	34	39
-11.70	-108.00	35.0	3271	79.4	2.9	1.9	100.3	10	32	1	1.500	0.1	2.0	0.9	31	38	38	41	52
-11.81	-107.18	36.0	3224	54.6	2.2	1.5	101.8	10	32	1	1.500	0.1	0.1	2.1	96	38	38	17	30
-11.91	-106.36	37.0	3176	50.6	1.7	1.1	102.9	9	32	1	1.501	0.1	0.1	1.6	94	38	38	13	25
-12.01	-105.54	38.0	3128	42.3	1.9	1.3	104.2	9	33	1	1.501	0.1	0.1	1.8	95	38	38	4	10
-12.10	-104.72	39.0	3080	33.1	1.7	1.1	105.4	8	33	1	1.501	0.1	0.1	1.6	94	38	38	-5	-15
-12.19	-103.90	40.0	3029	29.0	1.5	1.0	106.4	8	33	1	1.501	0.1	0.1	1.4	93	38	38	-9	-31
-12.28	-103.08	41.0	2976	29.1	1.6	1.0	107.4	7	33	1	1.501	0.1	0.1	1.5	94	38	38	-9	-31
-12.36	-102.26	42.0	2920	29.1	1.6	1.1	108.5	7	33	1	1.502	0.1	0.1	1.5	94	38	38	-9	-30

INITIAL LAT(CLAD1) IS -12.51   INITIAL LONGITUDE (CLOD) IS -134.67   BASEMENT AGE(AGEB) IS 37.5
DEPTH OF WATER IS 4181.00   SITE NUMBER IS 75

PDEPH = 4660.97   DEPH= 4181.00   DEPHC = -479.97

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
-12.71	-133.86	1.0	4148	0.0	0.0	0.0	0.0	19	33	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-12.90	-133.06	2.0	4115	0.0	0.0	0.0	0.0	19	33	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-13.09	-132.25	3.0	4081	0.0	0.0	0.0	0.0	18	34	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-13.28	-131.44	4.0	4048	0.0	0.0	0.0	0.0	18	34	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-13.46	-130.63	5.0	4015	0.0	0.0	0.0	0.0	18	34	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-13.65	-129.82	6.0	3981	0.0	0.0	0.0	0.0	17	34	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-13.83	-129.01	7.0	3948	0.0	0.0	0.0	0.0	17	34	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-14.01	-128.19	8.0	3914	0.0	0.0	0.0	0.0	17	35	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-14.18	-127.36	9.0	3880	0.0	0.0	0.0	0.0	16	35	1	1.490	0.0	0.0	0.0	****	0	0	0	****
-14.36	-126.56	10.0	3847	0.7	0.0	0.0	0.0	16	35	1	1.490	0.0	0.0	0.0	****	0	0	1	100
-14.53	-125.75	11.0	3813	6.1	0.0	0.0	0.0	16	35	1	1.490	0.0	0.0	0.0	****	0	0	6	100
-14.70	-124.93	12.0	3779	10.7	0.0	0.0	0.0	15	35	1	1.490	0.0	0.0	0.0	****	0	0	11	100
-14.86	-124.11	13.0	3746	13.8	0.1	0.1	0.1	15	35	1	1.490	0.0	0.0	0.1	100	0	11	3	23
-15.03	-123.29	14.0	3714	26.8	0.4	0.6	0.7	15	36	1	1.490	0.0	0.2	0.2	46	32	23	4	14
-15.19	-122.46	15.0	3678	46.6	0.6	0.8	1.6	14	36	1	1.490	0.7	0.6	-0.0	-6	37	48	-1	-3
-15.34	-121.64	16.0	3637	58.9	0.9	1.2	2.8	14	36	1	1.490	1.1	1.0	-0.1	-13	75	65	-6	-11
-15.50	-120.82	17.0	3596	63.0	2.0	2.6	5.6	13	36	1	1.490	1.1	1.7	0.3	15	84	81	-18	-29
-15.65	-119.99	18.0	3555	67.1	3.5	4.4	9.9	13	36	1	1.490	2.9	2.7	0.8	24	85	84	-17	-26
-15.80	-119.16	19.0	3513	72.5	4.4	4.7	14.7	13	36	1	1.490	4.0	3.6	0.8	18	84	84	-12	-16
-15.95	-118.33	20.0	3471	77.2	5.5	4.8	19.5	12	36	1	1.490	3.9	7.9	-2.5	-45	84	84	-7	-9
-16.09	-117.51	21.0	3428	79.2	6.2	3.8	23.3	12	37	1	1.490	15.9	12.4	-6.2	-100	85	85	-6	-7
-16.23	-116.67	22.0	3385	86.0	7.1	5.7	29.0	11	37	1	1.490	17.4	13.3	-6.2	-86	86	85	1	1
-16.37	-115.84	23.0	3343	83.3	8.0	7.0	36.0	11	37	1	1.490	6.7	10.8	-2.8	-36	85	87	-4	-4
-16.50	-115.01	24.0	3302	89.2	7.8	6.5	42.5	11	37	1	1.490	8.4	7.9	-0.1	-2	90	86	3	4
-16.63	-114.18	25.0	3258	84.5	6.6	5.5	48.0	10	37	1	1.490	8.6	8.6	-2.0	-30	83	85	-1	-1
-16.76	-113.34	26.0	3214	84.8	6.1	5.1	53.1	10	37	1	1.491	8.8	7.8	-1.6	-26	83	83	2	3
-16.89	-112.51	27.0	3169	84.2	6.4	5.1	58.2	9	37	1	1.492	5.9	6.8	-0.5	-7	82	82	2	2
-17.01	-111.67	28.0	3122	83.7	6.9	5.4	63.6	9	38	1	1.493	5.8	6.6	0.3	4	82	82	2	2
-17.13	-110.83	29.0	3071	82.3	6.5	4.9	68.5	8	38	1	1.494	8.0	7.2	-0.7	-11	81	80	2	2
-17.24	-109.99	30.0	3017	81.8	6.1	4.5	73.0	8	38	1	1.495	7.7	7.2	-1.1	-18	78	80	2	3
-17.35	-109.15	31.0	2956	81.3	5.3	3.8	76.8	7	38	1	1.495	6.0	6.6	-1.3	-25	80	80	1	2
-17.46	-108.31	32.0	2890	83.4	5.2	3.6	80.4	6	38	1	1.496	6.1	6.5	-1.3	-25	82	78	5	6
-17.57	-107.47	33.0	2815	82.2	4.4	3.0	83.4	6	38	1	1.497	7.4	6.1	-1.6	-37	73	76	7	8
-17.67	-106.63	34.0	2730	86.0	4.2	3.0	86.4	5	38	1	1.497	4.7	4.0	0.2	5	72	72	14	16
-17.77	-105.78	35.0	2633	79.9	2.4	1.7	88.1	4	38	1	1.498	0.0	1.6	0.8	34	72	48	32	40
-17.86	-104.94	36.0	2522	55.2	1.7	1.2	89.3	3	38	1	1.498	0.0	0.0	1.7	100	0	24	31	56
-17.96	-104.09	37.0	2397	51.5	1.4	1.0	90.3	1	38	1	1.498	0.0	0.0	1.4	100	0	0	51	100

INITIAL LAT(CLAD1) IS 0.43 INITIAL LONGITUDE (CLOD) IS -133.23 BASEMENT AGE(AGEB) IS 41.0
DEPTH OF WATER IS 4291.00 SITE NUMBER IS 77

PDEPH = 4776.76 DEPH= 4291.00 DEPHC = -485.76

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
0.29	-132.46	1.0	4279	82.9	26.2	25.1	25.1	20	20	1	1.490	16.6	16.6	9.6	37	80	80	3	3
0.10	-131.69	2.0	4268	82.1	21.2	18.3	43.4	20	20	1	1.490	13.1	17.7	3.5	17	81	78	4	5
-0.09	-130.92	3.0	4253	73.0	19.3	15.8	59.2	20	21	1	1.492	23.4	16.6	2.7	14	72	76	-3	-4
-0.27	-130.15	4.0	4235	75.1	18.9	14.3	73.5	20	21	1	1.495	13.3	20.5	-1.7	-9	75	76	-1	-1
-0.45	-129.38	5.0	4216	72.6	18.6	13.0	86.5	20	21	1	1.497	24.9	20.9	-2.3	-12	81	81	-9	-12
-0.63	-128.61	6.0	4194	68.0	16.3	11.2	97.7	19	21	1	1.500	24.4	24.2	-7.9	-48	88	85	-17	-25
-0.81	-127.83	7.0	4172	78.2	16.4	10.9	108.6	19	21	1	1.502	23.2	27.8	-11.4	-69	87	86	-8	-10
-0.99	-127.06	8.0	4151	75.2	18.1	11.7	120.3	19	21	1	1.504	35.7	29.5	-11.4	-63	83	84	-9	-12
-1.16	-126.29	9.0	4129	70.1	18.2	11.7	132.0	19	22	1	1.506	29.5	35.2	-17.1	-94	83	80	-10	-15
-1.33	-125.51	10.0	4108	68.3	18.6	11.5	143.5	19	22	1	1.509	40.5	29.5	-10.9	-58	75	83	-15	-22
-1.50	-124.74	11.0	4087	67.5	21.8	13.3	156.8	18	22	1	1.513	18.6	25.5	-3.7	-17	92	85	-17	-25
-1.66	-123.96	12.0	4067	75.3	22.3	13.2	170.1	18	22	1	1.518	17.3	21.7	0.6	3	87	90	-14	-19
-1.83	-123.19	13.0	4047	76.7	23.7	13.6	183.6	18	22	1	1.523	29.3	18.4	5.3	22	90	90	-13	-17
-1.99	-122.41	14.0	4026	77.6	21.1	12.0	195.6	18	22	1	1.528	8.6	18.2	2.9	14	93	90	-13	-16
-2.14	-121.63	15.0	4004	82.6	20.1	10.9	206.6	18	23	1	1.535	16.8	14.6	5.5	27	88	88	-5	-7
-2.30	-120.85	16.0	3979	78.0	20.0	10.6	217.2	17	23	1	1.544	18.5	18.7	1.3	6	83	84	-6	-7
-2.45	-120.08	17.0	3959	79.7	17.9	9.6	226.8	17	23	1	1.551	20.8	18.2	-0.4	-2	80	84	-5	-6
-2.60	-119.30	18.0	3933	82.4	17.6	9.3	236.0	17	23	1	1.559	15.4	15.7	1.9	11	90	86	-4	-5
-2.75	-118.52	19.0	3904	87.1	20.4	10.5	246.5	17	23	1	1.567	10.8	12.8	7.6	37	89	91	-4	-4
-2.89	-117.74	20.0	3874	91.0	24.9	13.5	260.0	16	23	1	1.576	12.2	16.8	8.2	33	93	93	-2	-2
-3.03	-116.95	21.0	3844	91.2	26.7	13.7	273.7	16	24	1	1.584	27.3	32.5	-5.8	-22	96	94	-3	-3
-3.17	-116.17	22.0	3812	95.8	28.9	14.8	288.4	16	24	1	1.593	58.1	42.0	-13.1	-45	94	94	1	1
-3.31	-115.39	23.0	3781	90.0	30.4	16.1	304.5	15	24	1	1.604	40.7	42.3	-11.9	-39	93	93	-3	-4
-3.44	-114.61	24.0	3745	96.3	29.3	13.3	317.9	15	24	1	1.614	28.0	40.8	-11.5	-39	93	94	3	3
-3.57	-113.82	25.0	3709	91.7	23.8	12.4	330.2	15	24	1	1.624	53.6	30.5	-6.7	-28	95	94	-3	-3
-3.70	-113.04	26.0	3673	92.5	21.6	11.4	341.6	14	24	1	1.633	10.0	24.6	-3.0	-14	95	94	-1	-2
-3.82	-112.26	27.0	3636	92.5	22.4	11.0	352.6	14	24	1	1.643	10.3	14.6	7.8	35	92	94	-1	-2
-3.94	-111.47	28.0	3599	92.3	24.1	11.6	364.2	13	24	1	1.657	23.4	17.2	6.9	29	95	94	-2	-2
-4.06	-110.68	29.0	3561	91.0	23.0	11.2	375.4	13	25	1	1.671	17.9	19.0	4.0	17	96	96	-5	-5
-4.17	-109.90	30.0	3522	90.2	22.2	11.5	387.0	13	25	1	1.684	15.7	16.9	5.3	24	96	95	-5	-6
-4.29	-109.11	31.0	3481	89.3	19.6	10.5	397.5	12	25	1	1.697	17.1	16.4	3.2	16	94	92	-3	-3
-4.39	-108.32	32.0	3438	91.1	19.2	10.3	407.8	12	25	1	1.711	16.5	17.9	1.3	7	87	90	1	2
-4.50	-107.54	33.0	3389	89.1	15.5	7.5	415.3	11	25	1	1.721	20.1	21.6	-6.1	-39	88	89	0	0
-4.60	-106.75	34.0	3334	92.6	14.4	5.4	421.7	11	25	1	1.730	28.2	25.1	-10.7	-75	93	92	1	1
-4.70	-105.96	35.0	3268	85.3	8.5	4.1	425.8	10	25	1	1.736	27.1	26.8	-18.3	-215	94	73	13	15
-4.80	-105.17	36.0	3197	58.3	6.8	3.4	429.1	9	25	1	1.741	25.2	17.4	-10.6	-157	31	42	17	29
-4.89	-104.38	37.0	3116	53.8	5.3	2.6	431.7	9	25	1	1.744	0.0	8.4	-3.1	-58	0	10	43	81
-4.98	-103.59	38.0	3027	44.9	6.1	3.0	434.7	8	25	1	1.749	0.0	0.0	6.1	100	0	0	45	100
-5.07	-102.80	39.0	2925	35.0	5.3	2.7	437.5	7	26	1	1.752	0.0	0.0	5.3	100	0	0	35	100
-5.15	-102.01	40.0	2808	30.6	4.7	2.4	439.9	6	26	1	1.756	0.0	0.0	4.7	100	0	0	31	100
-5.23	-101.21	41.0	2676	30.8	4.6	2.4	442.3	4	26	1	1.759	0.0	0.0	4.6	100	0	0	31	100

INITIAL LAT(CLAD1) IS 7.95   INITIAL LONGITUDE (CLOD) IS -127.36   BASEMENT AGE(AGEB) IS 35.0
DEPTH OF WATER IS 4363.00   SITE NUMBER IS 78

PDEPH = 4577.89   DEPH= 4363.00   DEPHC = -214.89

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
7.78	-126.61	1.0	4330	0.9	0.0	0.0	0.0	21	13	1	1.490	0.0	0.0	0.0	****	0	0	1	100
7.60	-125.87	2.0	4296	2.6	0.0	0.0	0.0	20	13	1	1.490	0.0	0.0	0.0	****	0	0	3	100
7.44	-125.12	3.0	4263	5.2	0.0	0.0	0.0	20	13	1	1.490	0.0	0.0	0.0	****	0	0	5	100
7.27	-124.38	4.0	4229	15.2	0.0	0.1	0.1	20	13	1	1.490	0.0	0.0	0.0	100	0	0	15	100
7.10	-123.63	5.0	4196	26.7	0.2	0.2	0.3	19	13	1	1.490	0.0	0.0	0.2	100	0	0	27	100
6.94	-122.88	6.0	4163	35.9	0.3	0.5	0.8	19	14	1	1.490	0.0	0.0	0.3	100	0	0	36	100
6.78	-122.14	7.0	4130	51.2	0.7	1.0	1.8	19	14	1	1.490	0.0	0.0	0.7	100	0	0	51	100
6.63	-121.39	8.0	4098	56.5	1.3	1.9	3.7	18	14	1	1.490	0.0	0.0	1.3	100	0	0	56	100
6.47	-120.64	9.0	4068	58.1	2.2	2.9	6.6	18	14	1	1.490	0.0	0.0	2.2	100	0	0	58	100
6.32	-119.89	10.0	4037	60.2	4.0	4.9	11.5	18	14	1	1.490	0.0	0.0	4.0	100	0	0	60	100
6.17	-119.14	11.0	4015	60.8	6.8	6.6	18.1	18	14	1	1.490	0.0	0.0	6.8	100	0	0	61	100
6.03	-118.40	12.0	3989	69.6	9.3	5.8	23.9	17	14	1	1.490	0.0	0.9	8.4	91	0	27	42	61
5.88	-117.65	13.0	3958	72.8	12.6	11.1	35.0	17	15	1	1.490	2.6	4.5	8.2	65	82	56	17	24
5.74	-116.90	14.0	3927	75.1	13.8	11.6	46.6	17	15	1	1.490	10.8	9.0	4.9	35	85	83	-8	-11
5.60	-116.15	15.0	3895	80.8	15.4	12.5	59.1	16	15	1	1.492	13.5	8.5	6.8	45	83	82	-1	-1
5.47	-115.40	16.0	3862	76.8	17.0	12.9	72.0	16	15	1	1.494	1.3	13.5	3.5	20	78	79	-2	-2
5.33	-114.65	17.0	3827	79.6	17.0	11.9	83.9	16	15	1	1.497	25.7	12.3	4.7	28	75	75	5	6
5.21	-113.90	18.0	3792	82.5	18.5	12.8	96.7	15	15	1	1.499	9.8	15.1	3.4	18	71	74	8	10
5.08	-113.15	19.0	3759	86.9	23.4	15.5	112.3	15	15	1	1.502	9.9	10.3	13.1	56	76	75	12	14
4.95	-112.39	20.0	3731	90.4	30.4	19.6	131.9	15	16	1	1.506	11.3	25.3	5.0	17	77	79	11	13
4.83	-111.64	21.0	3705	90.5	33.8	20.8	152.6	15	16	1	1.511	54.8	36.5	-2.7	-8	84	84	6	7
4.71	-110.89	22.0	3679	95.5	36.6	21.6	174.3	14	16	1	1.520	43.5	35.4	1.1	3	91	88	8	8
4.60	-110.14	23.0	3653	90.2	38.5	22.0	196.3	14	16	1	1.529	8.0	34.3	4.2	11	88	89	1	1
4.49	-109.39	24.0	3625	96.6	37.5	20.2	216.4	14	16	1	1.543	51.4	33.5	4.0	11	89	89	8	8
4.38	-108.63	25.0	3589	91.7	32.3	17.2	233.6	13	16	1	1.557	41.1	32.0	0.3	1	89	89	3	3
4.27	-107.88	26.0	3551	92.1	30.2	15.7	249.4	13	16	1	1.570	3.4	18.4	11.7	39	89	89	3	3
4.16	-107.13	27.0	3511	91.8	31.5	16.7	266.1	13	16	1	1.580	10.8	11.1	20.5	65	89	81	11	12
4.05	-106.37	28.0	3468	91.4	34.5	17.3	283.4	12	16	1	1.590	19.0	15.0	19.6	57	65	74	17	19
3.97	-105.62	29.0	3418	90.0	33.5	18.1	301.5	12	17	1	1.601	15.1	20.0	13.5	40	68	76	14	15
3.87	-104.86	30.0	3361	89.3	32.3	15.0	316.5	11	17	1	1.613	25.9	23.7	8.6	27	96	85	4	4
3.78	-104.11	31.0	3291	88.6	28.7	14.7	331.2	10	17	1	1.625	30.0	28.9	-0.2	-1	92	94	-6	-6
3.69	-103.35	32.0	3213	90.6	28.0	14.4	345.7	10	17	1	1.637	30.7	30.7	-2.6	-9	95	92	-2	-2
3.61	-102.60	33.0	3120	88.9	22.9	11.1	356.8	9	17	1	1.648	31.3	31.3	-8.4	-37	90	92	-3	-3
3.52	-101.84	34.0	3011	92.7	21.1	10.1	366.9	8	17	1	1.660	31.9	33.0	-11.9	-56	90	90	3	3
3.44	-101.09	35.0	2881	85.6	12.2	5.9	372.8	6	17	1	1.667	35.9	35.9	-23.7	-193	90	90	-4	-5

INITIAL LAT(CLAD1) IS 2.55   INITIAL LONGITUDE (CLOD) IS -121.57   BASEMENT AGE(AGEB) IS 24.1
DEPTH OF WATER IS 4566.00   SITE NUMBER IS 79

PDEPH = 4213.76   DEPH= 4566.00   DEPHC = 352.24

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
2.40	-120.81	1.0	4543	82.9	11.1	14.0	14.0	23	18	1	1.490	4.9	4.9	6.2	56	71	71	12	14
2.24	-120.05	2.0	4517	83.0	10.0	8.0	22.0	23	18	1	1.490	6.9	7.8	2.2	22	44	55	28	34
2.09	-119.28	3.0	4482	74.9	10.0	7.5	29.5	22	18	1	1.490	11.5	10.7	-0.6	-6	49	49	26	35
1.95	-118.52	4.0	4446	78.3	11.1	9.5	39.0	22	19	1	1.490	13.6	12.9	-1.8	-17	54	54	24	31
1.80	-117.76	5.0	4410	76.7	12.2	10.1	49.2	22	19	1	1.490	13.6	13.9	-1.7	-14	60	58	18	24
1.66	-116.99	6.0	4372	72.9	11.9	9.6	58.8	21	19	1	1.492	14.6	14.3	-2.4	-20	61	62	11	15
1.52	-116.23	7.0	4335	84.9	13.2	10.2	69.0	21	19	1	1.494	14.8	15.7	-2.4	-18	65	65	20	23
1.39	-115.46	8.0	4300	81.4	17.0	12.1	81.1	20	19	1	1.496	17.6	16.8	0.1	1	70	70	11	14
1.25	-114.70	9.0	4265	75.4	20.2	14.0	95.1	20	19	1	1.499	18.1	18.6	1.6	8	75	66	9	12
1.12	-113.93	10.0	4233	73.0	24.3	16.2	111.3	20	19	1	1.502	20.1	16.7	7.6	31	53	63	10	14
1.00	-113.16	11.0	4207	71.5	32.3	20.9	132.2	20	20	1	1.506	12.0	13.9	18.4	57	60	60	11	16
0.87	-112.40	12.0	4182	79.4	36.7	22.6	154.7	19	20	1	1.512	9.6	22.6	14.1	38	67	67	13	16
0.75	-111.63	13.0	4159	80.7	42.8	25.0	179.8	19	20	1	1.522	46.2	34.7	8.1	19	73	75	6	7
0.63	-110.86	14.0	4131	81.9	40.8	23.0	202.8	19	20	1	1.532	48.3	42.1	-1.3	-3	85	79	3	4
0.52	-110.09	15.0	4101	87.2	41.2	22.0	224.8	19	20	1	1.550	31.8	39.4	1.9	4	78	77	10	11
0.40	-109.33	16.0	4066	82.1	41.1	21.4	246.2	18	20	1	1.567	38.0	33.5	7.6	19	69	75	7	8
0.30	-108.56	17.0	4024	84.2	37.8	20.2	266.4	18	20	1	1.580	30.7	33.8	4.0	11	79	79	5	6
0.19	-107.79	18.0	3978	86.9	38.3	19.3	285.7	17	20	1	1.591	32.7	26.4	11.9	31	90	82	5	6
0.09	-107.02	19.0	3930	91.6	45.4	23.7	309.4	17	20	1	1.607	15.8	24.7	20.7	46	76	85	6	7
-0.01	-106.25	20.0	3879	95.5	56.3	28.1	337.5	16	21	1	1.630	25.6	19.2	37.1	66	90	86	10	10
-0.11	-105.48	21.0	3819	95.6	60.5	29.4	366.9	16	21	1	1.660	16.2	17.2	43.3	72	92	92	4	4
-0.21	-104.71	22.0	3746	****	62.7	32.5	399.4	15	21	1	1.699	9.9	8.7	54.0	86	93	62	40	39
-0.30	-103.93	23.0	3663	95.9	64.5	31.5	430.9	14	21	1	1.743	0.0	3.3	61.2	95	0	31	65	68
-0.39	-103.16	24.0	3559	****	60.1	27.5	458.4	13	21	1	1.782	0.0	0.0	60.1	100	0	0	104	100

INITIAL LAT(CLAT) IS -0.96   INITIAL LONGITUDE (CLOD) IS -121.55   BASEMENT AGE(AG2B) IS 22.5
DEPTH OF WATER IS 4399.00   SITE NUMBER IS 80

PDEPH = 4156.05   DEPH= 4399.00   DEPHC = 242.95

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
-1.11	-120.78	1.0	4368	66.5	9.6	12.4	12.4	21	22	1	1.490	9.8	9.8	-0.2	-2	82	82	-16	-23
-1.27	-120.00	2.0	4335	67.3	8.3	7.5	19.9	21	22	1	1.490	13.9	11.2	-2.9	-35	71	71	-4	-6
-1.42	-119.23	3.0	4296	62.1	7.9	4.8	24.6	20	22	1	1.490	9.8	7.9	-0.0	0	61	44	18	29
-1.56	-118.45	4.0	4255	66.7	8.3	7.4	32.0	20	22	1	1.490	0.0	8.6	-0.3	-4	0	20	46	70
-1.71	-117.67	5.0	4216	65.4	10.3	8.8	40.8	20	22	1	1.490	16.1	8.5	1.8	17	0	20	45	69
-1.85	-116.90	6.0	4177	62.6	10.4	8.6	49.4	19	22	1	1.490	9.4	10.4	0.0	0	61	42	21	33
-1.99	-116.12	7.0	4138	74.2	11.3	9.2	58.6	19	22	1	1.492	5.7	6.4	4.9	44	65	65	9	12
-2.12	-115.34	8.0	4100	73.4	13.3	10.3	68.8	19	23	1	1.494	4.0	3.9	9.4	71	70	65	8	11
-2.25	-114.56	9.0	4063	70.2	14.4	10.3	79.1	18	23	1	1.496	2.0	4.2	10.2	71	60	64	7	9
-2.38	-113.79	10.0	4025	69.0	15.3	10.7	89.8	18	23	1	1.498	6.5	3.6	11.8	77	61	61	8	11
-2.51	-113.01	11.0	3983	68.1	18.0	12.2	102.0	17	23	1	1.500	2.2	4.9	13.2	73	63	63	5	8
-2.63	-112.23	12.0	3950	76.6	18.6	12.2	114.2	17	23	1	1.503	5.9	5.2	13.5	72	65	65	12	15
-2.75	-111.44	13.0	3911	79.3	20.0	13.0	127.2	17	23	1	1.505	7.4	8.5	11.6	58	67	67	12	15
-2.87	-110.66	14.0	3867	82.0	18.3	11.5	138.7	16	23	1	1.508	12.1	14.4	3.8	21	69	70	12	15
-2.99	-109.88	15.0	3820	88.2	18.9	11.4	150.1	16	23	1	1.510	23.8	19.9	-1.0	-5	74	74	14	16
-3.10	-109.10	16.0	3769	83.7	20.8	12.8	163.0	15	24	1	1.515	23.7	23.7	-2.8	-14	79	79	5	6
-3.21	-108.32	17.0	3711	86.1	20.0	11.5	174.5	15	24	1	1.520	23.5	21.2	-1.1	-6	84	81	5	6
-3.31	-107.53	18.0	3644	88.7	20.3	11.7	186.1	14	24	1	1.524	16.3	15.6	4.7	23	80	84	5	6
-3.41	-106.75	19.0	3571	93.7	24.5	13.7	199.9	13	24	1	1.530	7.0	12.6	11.9	49	87	85	8	9
-3.51	-105.97	20.0	3491	97.4	31.4	16.8	216.6	12	24	1	1.543	14.4	15.7	15.7	50	89	89	8	8
-3.61	-105.18	21.0	3401	96.8	38.0	20.1	236.8	12	24	1	1.559	25.6	22.6	15.4	40	92	84	13	14
-3.70	-104.40	22.0	3299	****	43.1	22.8	259.6	10	24	1	1.576	27.8	27.8	15.3	35	70	70	31	31

INITIAL LAT(CLAD1) IS 2.59 INITIAL LONGITUDE (CLOD) IS -106.94 BASEMENT AGE(AGEB) IS 7.0
DEPTH OF WATER IS 3689.00 SITE NUMBER IS 82

PDEPH = 3390.06 DEPH= 3689.00 DEPHC = 298.94

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
2.49	-106.18	1.0	3647	95.4	32.0	30.3	30.3	14	18	1	1.490	15.9	15.9	16.1	50	79	79	16	17
2.39	-105.42	2.0	3600	95.7	27.7	23.2	53.5	14	18	1	1.491	18.3	17.6	10.1	36	73	76	20	21
2.30	-104.66	3.0	3540	86.1	26.3	20.2	73.7	13	18	1	1.495	18.6	17.6	8.7	33	75	75	11	13
2.21	-103.90	4.0	3468	90.3	27.2	19.0	92.7	12	18	1	1.499	16.0	19.8	7.4	27	77	75	15	17
2.12	-103.14	5.0	3384	87.9	28.6	19.0	111.7	11	18	1	1.502	24.7	46.5	-17.9	-63	73	73	15	17
2.04	-102.37	6.0	3283	81.7	26.9	17.4	129.2	10	18	1	1.506	98.9	53.1	-26.2	-97	70	71	11	13
1.95	-101.61	7.0	3168	93.6	29.3	18.0	147.2	9	19	1	1.509	35.8	35.8	-6.5	-22	70	70	24	25

INITIAL LAT(CLAD1) IS 12.33 INITIAL LONGITUDE (CLOD) IS -122.29 BASEMENT AGE(AGEB) IS 24.0
DEPTH OF WATER IS 4484.00 SITE NUMBER IS 159

PDEPH = 4210.52 DEPH= 4484.00 DEPHC = 273.48

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
12.17	-121.56	1.0	4449	0.0	0.0	0.0	0.0	22	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.02	-120.83	2.0	4409	0.0	0.0	0.0	0.0	22	8	1	1.490	0.2	0.1	-0.1	****	0	5	-5	****
11.87	-120.11	3.0	4367	0.0	0.0	0.0	0.0	21	9	1	1.490	0.2	0.2	-0.2	****	14	9	-9	****
11.72	-119.38	4.0	4322	0.0	0.0	0.0	0.0	21	9	1	1.490	0.2	0.2	-0.2	****	14	14	-14	****
11.57	-118.65	5.0	4275	0.0	0.0	0.0	0.0	20	9	1	1.490	0.2	0.3	-0.3	****	14	14	-14	****
11.42	-117.92	6.0	4227	0.0	0.0	0.0	0.0	20	9	1	1.490	0.5	0.4	-0.4	****	14	14	-14	****
11.28	-117.19	7.0	4179	0.0	0.0	0.0	0.0	19	9	1	1.490	0.4	0.4	-0.4	****	14	14	-14	****
11.14	-116.46	8.0	4131	0.0	0.0	0.1	0.1	19	9	1	1.490	0.4	0.8	-0.8	****	14	14	-14	****
11.01	-115.73	9.0	4083	0.0	0.2	0.3	0.4	18	9	1	1.490	1.7	1.3	-1.1	-512	14	14	-14	****
10.87	-115.00	10.0	4036	1.1	0.4	0.7	1.0	18	10	1	1.490	1.7	1.6	-1.2	-263	14	14	-13	****
10.74	-114.27	11.0	3988	4.6	0.8	1.2	2.2	17	10	1	1.490	1.4	1.7	-0.9	-117	14	14	-9	-205
10.61	-113.54	12.0	3941	10.0	1.2	1.6	3.8	17	10	1	1.490	2.1	1.7	-0.6	-50	14	14	-4	-40
10.49	-112.81	13.0	3894	20.0	2.2	3.0	6.8	16	10	1	1.490	1.7	1.9	0.3	13	14	14	6	30
10.36	-112.08	14.0	3846	31.7	3.1	3.8	10.6	16	10	1	1.490	2.0	2.2	0.9	30	14	11	21	65
10.24	-111.35	15.0	3798	42.9	4.2	4.5	15.1	15	10	1	1.490	2.9	2.5	1.7	41	5	8	35	81
10.13	-110.62	16.0	3746	49.0	5.5	4.7	19.8	15	10	1	1.490	2.5	3.1	2.4	43	5	7	42	86
10.01	-109.89	17.0	3690	57.4	6.1	3.7	23.4	14	10	1	1.490	3.9	4.9	1.2	19	10	8	49	85
9.90	-109.16	18.0	3628	64.6	6.8	5.6	29.0	14	11	1	1.490	8.3	8.0	-1.1	-16	10	10	55	85
9.79	-108.43	19.0	3561	71.7	8.5	7.4	36.4	13	11	1	1.490	11.7	11.6	-3.1	-36	10	16	56	78
9.68	-107.70	20.0	3489	76.7	11.4	9.5	45.9	12	11	1	1.490	14.7	16.6	-5.1	-45	27	23	54	70
9.58	-106.97	21.0	3407	78.6	13.3	10.9	56.8	12	11	1	1.491	23.3	17.4	-4.1	-31	31	30	49	62
9.48	-106.23	22.0	3315	86.0	15.3	11.9	68.7	11	11	1	1.494	14.3	16.1	-0.8	-5	31	39	47	55
9.38	-105.50	23.0	3210	84.1	18.2	13.0	81.7	10	11	1	1.496	10.7	8.9	9.3	51	54	52	32	38
9.29	-104.77	24.0	3089	91.5	19.8	13.7	95.4	8	11	1	1.499	1.6	1.6	18.2	92	72	72	20	21

INITIAL LAT(CLAD1) IS 11.72   INITIAL LONGITUDE (CLOD) IS -130.88   BASEMENT AGE(AGEB) IS 34.8
DEPTH OF WATER IS 4940.00   SITE NUMBER IS 160

PDEPH = 4571.23   DEPH= 4940.00   DEPHC = 368.77

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
11.54	-130.14	1.0	4907	0.0	0.0	0.0	0.0	27	9	1	1.490	6.7	6.7	-6.7	****	0	0	0	****
11.35	-129.41	2.0	4873	0.0	0.0	0.0	0.0	26	9	1	1.490	0.1	2.3	-2.3	****	0	0	0	****
11.17	-128.67	3.0	4840	0.0	0.0	0.0	0.0	26	9	1	1.490	0.2	0.1	-0.1	****	0	0	0	****
10.99	-127.94	4.0	4806	0.0	0.0	0.0	0.0	26	10	1	1.490	0.1	0.2	-0.2	****	0	0	0	****
10.82	-127.20	5.0	4773	0.0	0.0	0.0	0.0	25	10	1	1.490	0.2	0.2	-0.2	****	0	0	0	****
10.65	-126.47	6.0	4739	0.0	0.0	0.0	0.0	25	10	1	1.490	0.2	0.2	-0.2	****	0	0	0	****
10.47	-125.73	7.0	4706	0.0	0.0	0.0	0.0	25	10	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
10.31	-124.99	8.0	4672	0.0	0.0	0.0	0.0	24	10	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
10.14	-124.26	9.0	4638	0.0	0.0	0.0	0.0	24	10	1	1.490	0.2	0.3	-0.3	****	0	0	0	****
9.98	-123.52	10.0	4604	0.0	0.0	0.0	0.0	24	11	1	1.490	0.5	0.3	-0.3	****	1	1	-1	****
9.81	-122.78	11.0	4573	0.0	0.0	0.0	0.0	23	11	1	1.490	0.3	0.5	-0.5	****	1	1	-1	****
9.66	-122.04	12.0	4537	0.0	0.0	0.0	0.0	23	11	1	1.490	0.7	0.5	-0.5	****	0	0	0	****
9.50	-121.31	13.0	4496	0.0	0.0	0.0	0.0	22	11	1	1.490	0.5	0.7	-0.7	****	0	0	0	100
9.35	-120.57	14.0	4453	0.0	0.0	0.0	0.0	22	11	1	1.490	0.9	0.8	-0.8	****	0	0	0	100
9.19	-119.83	15.0	4408	0.0	0.0	0.0	0.0	22	11	1	1.490	1.0	1.0	-1.0	****	0	0	0	-969
9.05	-119.09	16.0	4361	0.0	0.0	0.0	0.0	21	11	1	1.490	1.1	1.0	-1.0	****	1	0	0	-664
8.90	-118.36	17.0	4313	0.1	0.0	0.0	0.0	21	12	1	1.490	1.0	1.4	-1.4	****	0	1	-1	****
8.76	-117.62	18.0	4265	0.1	0.0	0.0	0.0	20	12	1	1.490	2.2	2.6	-2.6	****	3	1	-1	****
8.61	-116.88	19.0	4217	4.6	0.0	0.0	0.0	20	12	1	1.490	4.7	3.5	-3.5	****	0	23	-18	-396
8.48	-116.14	20.0	4169	13.5	0.0	0.0	0.0	19	12	1	1.490	3.6	4.1	-4.1	****	66	46	-33	-243
8.34	-115.40	21.0	4121	25.6	0.6	0.9	0.9	19	12	1	1.490	4.1	3.5	-2.9	-486	73	66	-40	-156
8.21	-114.66	22.0	4075	41.1	1.5	2.2	3.1	18	12	1	1.490	2.7	4.0	-2.5	-164	58	67	-26	-64
8.08	-113.92	23.0	4030	50.8	3.2	4.3	7.3	18	12	1	1.490	5.2	4.4	-1.2	-39	71	67	-16	-32
7.95	-113.18	24.0	3986	64.2	5.8	6.6	13.9	17	13	1	1.490	5.3	7.2	-1.4	-25	72	74	-9	-15
7.83	-112.44	25.0	3943	68.1	7.4	6.4	20.3	17	13	1	1.490	11.1	7.4	0.0	1	78	76	-8	-11
7.71	-111.70	26.0	3896	72.2	8.9	5.8	26.2	16	13	1	1.490	5.7	7.7	1.2	14	77	81	-8	-12
7.59	-110.96	27.0	3847	75.3	11.5	10.1	36.3	16	13	1	1.490	6.3	7.4	4.1	36	87	83	-8	-11
7.47	-110.22	28.0	3796	76.4	14.3	11.9	48.2	15	13	1	1.490	10.2	10.8	3.5	24	86	88	-12	-15
7.36	-109.48	29.0	3741	76.7	15.1	12.2	60.4	15	13	1	1.492	15.9	13.7	1.4	10	91	89	-12	-16
7.25	-108.74	30.0	3677	78.3	15.0	11.4	71.8	14	13	1	1.494	14.9	14.7	0.3	2	90	90	-11	-15
7.14	-107.99	31.0	3603	79.3	13.3	9.4	81.2	14	13	1	1.496	13.2	13.2	0.1	1	88	89	-10	-13
7.04	-107.25	32.0	3518	82.2	13.3	9.3	90.5	13	13	1	1.498	11.5	11.0	2.3	17	90	89	-7	-9
6.93	-106.51	33.0	3419	81.7	11.7	7.9	98.4	12	14	1	1.500	8.4	11.2	0.5	4	90	90	-8	-10
6.84	-105.77	34.0	3305	86.4	11.3	7.5	106.0	11	14	1	1.501	13.7	13.7	-2.4	-21	89	89	-3	-3

INITIAL LAT(CLAD) IS 10.24 INITIAL LONGITUDE (CLOD) IS -139.95 BASEMENT AGE(AGEB) IS 46.0
DEPTH OF WATER IS 4939.00 SITE NUMBER IS 161

PDEPH = 4941.10 DEPH= 4939.00 DEPHC = -2.10

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
10.03	-139.20	1.0	4906	0.0	0.0	0.0	0.0	27	10	1	1.490	0.0	0.0	0.0	****	74	74	-74	****
9.82	-138.46	2.0	4873	0.0	0.0	0.0	0.0	26	11	1	1.490	0.0	0.0	0.0	****	74	74	-74	****
9.62	-137.71	3.0	4841	0.0	0.0	0.0	0.0	26	11	1	1.490	0.0	0.0	0.0	****	74	49	-49	****
9.42	-136.97	4.0	4808	0.0	0.0	0.0	0.0	26	11	1	1.490	0.0	0.0	0.0	****	0	25	-25	****
9.21	-136.22	5.0	4775	0.0	0.0	0.0	0.0	25	11	1	1.490	0.0	0.0	0.0	****	0	0	0	100
9.01	-135.47	6.0	4742	0.0	0.0	0.0	0.0	25	11	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.82	-134.73	7.0	4709	0.1	0.0	0.0	0.0	25	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.62	-133.98	8.0	4675	0.1	0.0	0.0	0.0	24	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.43	-133.24	9.0	4642	0.1	0.0	0.0	0.0	24	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.24	-132.49	10.0	4609	0.1	0.0	0.0	0.0	24	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.05	-131.74	11.0	4576	0.1	0.0	0.0	0.0	23	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.86	-130.99	12.0	4542	0.1	0.0	0.0	0.0	23	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.68	-130.25	13.0	4509	0.1	0.0	0.0	0.0	23	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.49	-129.50	14.0	4476	0.1	0.0	0.0	0.0	22	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.31	-128.75	15.0	4442	0.1	0.0	0.0	0.0	22	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.13	-128.00	16.0	4409	0.1	0.0	0.0	0.0	22	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
6.96	-127.26	17.0	4375	0.1	0.0	0.0	0.0	21	14	1	1.490	0.0	0.0	0.0	****	0	0	0	100
6.78	-126.51	18.0	4341	1.7	0.0	0.0	0.0	21	14	1	1.490	0.0	0.0	0.0	****	0	0	2	100
6.61	-125.76	19.0	4308	10.0	0.0	0.0	0.0	21	14	1	1.490	0.0	0.0	0.0	****	0	0	10	100
6.44	-125.01	20.0	4275	21.6	0.4	0.6	0.6	20	14	1	1.490	0.0	0.0	0.4	100	0	0	22	100
6.28	-124.26	21.0	4241	34.6	2.1	3.1	3.7	20	14	1	1.490	0.0	0.0	2.1	100	0	0	35	100
6.11	-123.51	22.0	4217	46.6	4.3	5.5	9.2	20	14	1	1.490	0.0	0.0	4.3	100	0	25	22	47
5.95	-122.76	23.0	4190	53.0	6.5	6.9	16.2	19	15	1	1.490	0.0	7.1	-0.6	-9	74	47	6	11
5.79	-122.01	24.0	4159	66.0	8.3	6.2	22.3	19	15	1	1.490	21.3	14.9	-6.6	-79	67	68	-2	-3
5.64	-121.26	25.0	4124	69.1	9.7	7.4	29.7	19	15	1	1.490	23.3	20.5	-10.8	-111	64	68	1	2
5.48	-120.51	26.0	4088	74.2	11.8	10.2	39.9	18	15	1	1.490	16.9	17.8	-5.9	-50	73	73	1	2
5.33	-119.76	27.0	4054	77.8	14.6	12.1	52.0	18	15	1	1.490	13.1	18.7	-4.1	-28	82	81	-3	-4
5.19	-119.00	28.0	4020	79.5	17.8	14.1	66.1	18	15	1	1.493	26.0	18.4	-0.6	-4	87	86	-7	-9
5.04	-118.25	29.0	3987	79.7	18.9	13.7	79.7	17	15	1	1.496	16.2	23.8	-4.9	-26	90	89	-10	-12
4.90	-117.50	30.0	3953	80.1	19.7	13.7	93.4	17	16	1	1.499	29.1	19.8	-0.1	-1	91	90	-10	-13
4.76	-116.75	31.0	3917	80.5	17.7	11.8	105.2	17	16	1	1.501	14.2	24.3	-6.7	-38	90	92	-12	-14
4.62	-115.99	32.0	3881	83.5	17.5	11.3	116.6	16	16	1	1.503	29.7	27.4	-9.9	-57	95	92	-8	-10
4.48	-115.24	33.0	3842	83.3	14.7	9.6	126.2	16	16	1	1.505	38.2	36.0	-21.3	-145	90	90	-6	-8
4.35	-114.49	34.0	3802	87.8	14.5	9.2	135.4	16	16	1	1.507	40.1	36.1	-21.7	-150	84	86	1	2
4.22	-113.73	35.0	3757	82.3	8.8	5.4	140.8	15	16	1	1.508	30.1	26.2	-17.4	-198	85	80	2	3
4.10	-112.98	36.0	3709	57.0	6.9	4.2	145.0	15	16	1	1.509	8.4	15.2	-8.2	-118	71	74	-17	-29
3.97	-112.22	37.0	3658	53.1	5.5	3.3	148.3	14	17	1	1.510	7.0	8.2	-2.7	-49	65	72	-19	-35
3.85	-111.47	38.0	3605	44.5	6.4	4.0	152.3	14	17	1	1.511	9.2	8.3	-1.9	-31	79	50	-6	-12
3.73	-110.71	39.0	3547	34.8	5.6	3.5	155.7	13	17	1	1.512	8.8	7.9	-2.2	-40	6	34	0	1
3.62	-109.95	40.0	3483	30.5	5.2	3.2	158.9	12	17	1	1.514	5.6	6.6	-1.4	-27	18	13	17	56
3.51	-109.20	41.0	3412	30.6	5.4	3.3	162.2	12	17	1	1.515	5.4	5.4	-0.0	0	16	14	17	55
3.40	-108.44	42.0	3333	30.7	5.5	3.3	165.5	11	17	1	1.516	5.2	5.2	0.3	6	7	7	24	77

INITIAL LAT(CLAD1) IS 14.86   INITIAL LONGITUDE (CLOD) IS -144.04   BASEMENT AGE(AGEB) IS 53.0
DEPTH OF WATER IS 4854.00   SITE NUMBER IS 162

PDEPH = 5194.62   DEPH= 4854.00   DEPHC = -340.62

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
14.66	-143.30	1.0	4828	0.0	0.0	0.0	0.0	26	6	1	1.490	0.0	0.0	0.0	****	0	0	0	****
14.45	-142.56	2.0	4802	0.0	0.0	0.0	0.0	26	6	1	1.490	0.0	0.0	0.0	****	0	0	0	****
14.23	-141.83	3.0	4731	0.0	0.0	0.0	0.0	25	6	1	1.490	0.0	0.0	0.0	****	0	0	0	****
14.02	-141.09	4.0	4698	0.0	0.0	0.0	0.0	24	6	1	1.490	0.0	0.0	0.0	****	0	0	0	****
13.81	-140.35	5.0	4666	0.0	0.0	0.0	0.0	24	7	1	1.490	0.0	0.0	0.0	****	0	0	0	****
13.60	-139.61	6.0	4633	0.0	0.0	0.0	0.0	24	7	1	1.490	0.0	0.0	0.0	****	0	0	0	****
13.39	-138.88	7.0	4600	0.0	0.0	0.0	0.0	24	7	1	1.490	0.0	0.0	0.0	****	0	0	0	****
13.18	-138.14	8.0	4568	0.0	0.0	0.0	0.0	23	7	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.98	-137.40	9.0	4535	0.0	0.0	0.0	0.0	23	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.77	-136.67	10.0	4502	0.0	0.0	0.0	0.0	23	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.57	-135.93	11.0	4469	0.0	0.0	0.0	0.0	22	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.37	-135.19	12.0	4436	0.0	0.0	0.0	0.0	22	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
12.18	-134.46	13.0	4403	0.0	0.0	0.0	0.0	22	8	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.98	-133.72	14.0	4370	0.0	0.0	0.0	0.0	21	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.79	-132.98	15.0	4337	0.0	0.0	0.0	0.0	21	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.60	-132.25	16.0	4304	0.0	0.0	0.0	0.0	21	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.41	-131.51	17.0	4271	0.0	0.0	0.0	0.0	20	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.22	-130.77	18.0	4237	0.0	0.0	0.0	0.0	20	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
11.04	-130.04	19.0	4204	0.0	0.0	0.0	0.0	20	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.86	-129.30	20.0	4171	0.0	0.0	0.0	0.0	19	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.68	-128.56	21.0	4137	0.0	0.1	0.1	0.1	19	10	1	1.490	0.0	0.0	0.1	100	0	0	0	****
10.50	-127.82	22.0	4104	0.0	0.4	0.6	0.8	19	10	1	1.490	0.0	0.0	0.4	100	0	0	0	****
10.33	-127.09	23.0	4072	1.4	0.8	1.2	2.0	18	10	1	1.490	0.0	0.0	0.8	100	0	0	1	100
10.15	-126.35	24.0	4040	5.4	1.2	1.6	3.6	18	10	1	1.490	0.0	0.0	1.2	100	0	0	5	100
9.98	-125.61	25.0	4008	12.4	1.1	1.5	5.1	18	11	1	1.490	0.0	0.0	1.1	100	0	0	12	100
9.81	-124.87	26.0	3976	21.2	1.0	1.4	6.5	17	11	1	1.490	0.0	0.0	1.0	100	0	0	21	100
9.65	-124.14	27.0	3944	30.8	1.3	1.7	8.2	17	11	1	1.490	0.0	0.0	1.3	100	0	0	31	100
9.48	-123.40	28.0	3911	39.7	2.9	3.5	11.6	17	11	1	1.490	0.0	0.0	2.9	100	0	0	40	100
9.32	-122.66	29.0	3880	46.1	4.2	4.3	15.9	16	11	1	1.490	0.0	0.0	4.2	100	0	0	46	100
9.16	-121.92	30.0	3857	52.8	5.4	4.4	20.3	16	11	1	1.490	0.0	0.0	5.4	100	0	26	27	51
9.01	-121.18	31.0	3822	57.8	5.5	3.2	23.5	16	11	1	1.490	0.0	3.0	2.5	45	78	52	6	10
8.86	-120.44	32.0	3783	63.3	6.0	4.9	28.5	15	12	1	1.490	9.0	4.3	1.7	29	78	74	-11	-17
8.70	-119.70	33.0	3742	65.2	5.5	4.8	33.3	15	12	1	1.490	3.9	7.2	-1.8	-32	67	75	-9	-14
8.55	-118.96	34.0	3700	70.7	5.3	4.6	37.9	15	12	1	1.490	8.8	6.0	-0.7	-12	79	69	2	3
8.41	-118.22	35.0	3655	67.9	3.3	2.8	40.7	14	12	1	1.490	5.3	6.4	-3.0	-91	60	65	3	5
8.27	-117.48	36.0	3609	47.7	2.8	2.3	42.9	14	12	1	1.490	5.0	4.6	-1.8	-66	55	46	2	4
8.13	-116.74	37.0	3563	45.2	2.2	1.8	44.8	13	12	1	1.490	3.4	3.5	-1.2	-55	23	28	18	39
7.99	-116.00	38.0	3517	38.6	2.7	2.2	47.0	13	13	1	1.490	2.0	2.3	0.3	13	5	12	27	70
7.85	-115.26	39.0	3471	30.8	2.4	2.0	49.0	12	13	1	1.490	1.6	1.7	0.7	30	7	6	25	82
7.72	-114.52	40.0	3424	27.3	2.3	1.9	50.9	12	13	1	1.490	1.5	1.3	1.0	44	5	6	22	79
7.59	-113.78	41.0	3377	27.8	2.5	2.0	52.9	11	13	1	1.491	0.8	1.4	1.1	43	5	4	24	87
7.47	-113.03	42.0	3329	28.1	2.6	2.1	55.1	11	13	1	1.491	1.9	1.9	0.7	27	1	1	27	96

INITIAL LAT(CLAD1) IS 11.25 INITIAL LONGITUDE (CLOD) IS -150.29 BASEMENT AGE(AGEB) IS 76.0
DEPTH OF WATER IS 5230.00 SITE NUMBER IS 163

PDEPH = 5620.78 DEPH= 5230.00 DEPHC = -390.78

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
11.02	-149.54	1.0	5217	0.0	0.0	0.0	0.0	30	9	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.79	-148.79	2.0	5203	0.0	0.0	0.0	0.0	30	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.56	-148.04	3.0	5190	0.0	0.0	0.0	0.0	29	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.34	-147.29	4.0	5175	0.0	0.0	0.0	0.0	29	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
10.11	-146.54	5.0	5160	0.0	0.0	0.0	0.0	29	10	1	1.490	0.0	0.0	0.0	****	0	0	0	****
9.89	-145.79	6.0	5145	0.0	0.0	0.0	0.0	29	11	1	1.490	0.0	0.0	0.0	****	0	0	0	****
9.67	-145.04	7.0	5129	0.0	0.0	0.0	0.0	29	11	1	1.490	0.0	0.0	0.0	****	0	0	0	****
9.45	-144.29	8.0	5113	0.0	0.0	0.0	0.0	29	11	1	1.490	0.0	0.0	0.0	****	0	0	0	100
9.23	-143.53	9.0	5096	0.0	0.0	0.0	0.0	28	11	1	1.490	0.0	0.0	0.0	****	0	0	0	100
9.01	-142.78	10.0	5079	0.0	0.0	0.0	0.0	28	11	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.80	-142.03	11.0	5061	0.1	0.0	0.0	0.0	28	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.58	-141.28	12.0	5043	0.1	0.0	0.0	0.0	28	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.37	-140.53	13.0	5024	0.1	0.0	0.0	0.0	28	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
8.16	-139.78	14.0	5005	0.1	0.0	0.0	0.0	28	12	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.95	-139.03	15.0	4985	0.1	0.0	0.0	0.0	27	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.74	-138.28	16.0	4964	0.1	0.0	0.0	0.0	27	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.54	-137.53	17.0	4943	0.1	0.0	0.0	0.0	27	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.34	-136.78	18.0	4922	0.1	0.0	0.0	0.0	27	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
7.14	-136.03	19.0	4899	0.1	0.0	0.0	0.0	26	13	1	1.490	0.0	0.0	0.0	****	0	0	0	100
6.94	-135.28	20.0	4876	0.1	0.0	0.0	0.0	26	14	1	1.490	0.0	0.0	0.0	****	0	0	0	100
6.74	-134.52	21.0	4853	0.1	0.0	0.0	0.0	26	14	1	1.490	0.0	0.0	0.0	****	0	0	0	100
6.54	-133.77	22.0	4829	0.1	0.0	0.0	0.0	26	14	1	1.490	0.0	0.0	0.0	****	0	0	0	100
6.35	-133.02	23.0	4804	0.2	0.4	0.6	0.6	26	14	1	1.490	0.0	0.0	0.4	100	0	0	0	100
6.16	-132.27	24.0	4780	0.4	0.9	1.3	1.9	25	14	1	1.490	0.0	0.0	0.9	100	0	0	0	100
5.97	-131.51	25.0	4756	0.6	1.2	1.7	3.6	25	15	1	1.490	0.0	0.0	1.2	100	0	0	1	100
5.79	-130.76	26.0	4667	0.8	1.8	2.4	6.0	24	15	1	1.490	0.0	0.0	1.8	100	0	0	1	100
5.60	-130.01	27.0	4657	0.9	2.4	3.0	9.0	24	15	1	1.490	0.0	0.4	2.0	85	0	0	1	100
5.42	-129.25	28.0	4628	4.9	3.0	3.5	12.5	24	15	1	1.490	1.1	1.3	1.7	57	0	0	5	100
5.24	-128.50	29.0	4599	12.5	3.3	3.3	15.8	23	15	1	1.490	2.8	1.8	1.4	44	0	0	13	100
5.06	-127.74	30.0	4570	18.9	3.5	3.0	18.8	23	15	1	1.490	1.6	2.0	1.5	42	0	0	19	98
4.89	-126.99	31.0	4540	24.9	3.4	2.4	21.3	23	16	1	1.490	1.7	1.5	1.9	57	1	1	24	97
4.72	-126.23	32.0	4510	33.5	3.6	2.0	23.3	23	16	1	1.490	1.1	1.2	2.4	67	1	1	33	98
4.54	-125.48	33.0	4479	41.2	3.2	2.2	25.5	22	16	1	1.490	0.8	0.9	2.3	72	0	0	41	99
4.38	-124.72	34.0	4448	49.6	3.3	3.0	28.4	22	16	1	1.490	0.8	0.7	2.6	79	0	0	50	100
4.21	-123.97	35.0	4417	51.2	2.2	2.0	30.4	22	16	1	1.490	0.5	0.6	1.6	72	0	0	51	99
4.05	-123.21	36.0	4386	38.2	2.0	1.7	32.1	21	16	1	1.490	0.6	0.6	1.3	68	1	1	37	97
3.89	-122.45	37.0	4354	37.7	1.7	1.5	33.6	21	17	1	1.490	0.8	0.7	1.0	58	2	1	37	97
3.73	-121.70	38.0	4323	33.8	2.3	1.9	35.6	21	17	1	1.490	0.8	1.2	1.0	45	0	1	33	96
3.58	-120.94	39.0	4292	28.0	2.2	1.9	37.5	20	17	1	1.490	2.1	1.4	0.9	39	0	0	28	100
3.42	-120.18	40.0	4261	25.5	2.3	1.9	39.4	20	17	1	1.490	1.2	1.6	0.7	29	0	0	25	100
3.27	-119.42	41.0	4230	26.3	2.6	2.1	41.5	20	17	1	1.490	1.5	1.6	1.0	38	0	0	26	100
3.13	-118.66	42.0	4199	27.0	2.9	2.4	43.9	19	17	1	1.490	2.1	2.1	0.8	28	0	0	27	100

INITIAL LAT(CLAD1) IS 13.20   INITIAL LONGITUDE (CLOD) IS -161.66   BASEMENT AGE(AGEB) IS 115.0
DEPTH OF WATER IS 5485.00   SITE NUMBER IS 164

PDEPH = 5889.42   DEPH= 5485.00   DEPHC = -404.42

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
12.95	-160.90	1.0	5482	0.0	0.0	0.0	0.0	32	8	1	1.490	0.1	0.1	-0.1	****	0	0	0	****
12.71	-160.14	2.0	5479	0.0	0.0	0.0	0.0	32	8	1	1.490	0.2	0.2	-0.2	****	0	0	0	****
12.47	-159.39	3.0	5476	0.0	0.0	0.0	0.0	32	8	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
12.22	-158.63	4.0	5473	0.0	0.0	0.0	0.0	32	8	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
11.98	-157.87	5.0	5469	0.0	0.0	0.0	0.0	32	9	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
11.74	-157.12	6.0	5466	0.0	0.0	0.0	0.0	32	9	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
11.50	-156.36	7.0	5462	0.0	0.0	0.0	0.0	32	9	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
11.26	-155.60	8.0	5458	0.0	0.0	0.0	0.0	32	9	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
11.02	-154.85	9.0	5454	0.0	0.0	0.0	0.0	32	9	1	1.490	0.2	0.2	-0.2	****	0	0	0	****
10.79	-154.09	10.0	5450	0.0	0.0	0.0	0.0	32	10	1	1.490	0.2	0.3	-0.3	****	0	0	0	****
10.55	-153.34	11.0	5445	0.0	0.0	0.0	0.0	32	10	1	1.490	0.4	0.3	-0.3	****	0	0	0	****
10.31	-152.58	12.0	5441	0.0	0.0	0.0	0.0	32	10	1	1.490	0.4	0.4	-0.4	****	0	0	0	****
10.08	-151.83	13.0	5436	0.0	0.0	0.0	0.0	32	10	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
9.85	-151.08	14.0	5431	0.0	0.0	0.0	0.0	32	11	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
9.62	-150.32	15.0	5426	0.0	0.0	0.0	0.0	32	11	1	1.490	0.3	0.3	-0.3	****	0	0	0	****
9.39	-149.57	16.0	5420	0.0	0.0	0.0	0.0	32	11	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
9.16	-148.81	17.0	5414	0.0	0.0	0.0	0.0	32	11	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
8.93	-148.06	18.0	5408	0.1	0.0	0.0	0.0	32	12	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
8.70	-147.31	19.0	5402	0.1	0.0	0.0	0.0	32	12	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
8.48	-146.55	20.0	5396	0.1	0.0	0.0	0.0	31	12	1	1.490	0.3	0.4	-0.4	****	0	0	0	100
8.25	-145.80	21.0	5389	0.1	0.0	0.0	0.0	31	12	1	1.490	0.7	0.4	-0.4	****	0	0	0	100
8.03	-145.05	22.0	5382	0.1	0.0	0.0	0.0	31	12	1	1.490	0.1	0.3	-0.3	****	0	0	0	100
7.81	-144.29	23.0	5375	0.1	0.0	0.0	0.0	31	13	1	1.490	0.2	0.2	-0.2	****	0	0	0	100
7.59	-143.54	24.0	5367	0.1	0.0	0.0	0.0	31	13	1	1.490	0.2	0.3	-0.3	****	0	0	0	100
7.38	-142.78	25.0	5360	0.1	0.0	0.0	0.0	31	13	1	1.490	0.4	0.3	-0.3	****	0	0	0	100
7.16	-142.03	26.0	5352	0.1	0.0	0.0	0.0	31	13	1	1.490	0.4	0.4	-0.4	****	0	0	0	100
6.95	-141.28	27.0	5343	0.1	0.0	0.0	0.0	31	14	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
6.73	-140.52	28.0	5335	0.1	0.0	0.0	0.0	31	14	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
6.52	-139.77	29.0	5326	0.1	0.0	0.0	0.0	31	14	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
6.32	-139.01	30.0	5316	0.1	0.2	0.3	0.3	31	14	1	1.490	0.3	0.3	-0.1	-65	0	0	0	100
6.11	-138.26	31.0	5307	0.1	0.3	0.5	0.8	31	14	1	1.490	0.3	0.3	0.0	9	0	0	0	100
5.90	-137.50	32.0	5298	0.2	0.5	0.7	1.4	30	15	1	1.490	0.3	0.3	0.2	36	0	0	0	100
5.70	-136.75	33.0	5288	0.2	0.5	0.7	2.2	30	15	1	1.490	0.3	0.3	0.2	40	0	0	0	100
5.50	-135.99	34.0	5278	0.2	0.6	0.8	3.0	30	15	1	1.490	0.3	0.3	0.3	47	0	0	0	100
5.30	-135.23	35.0	5268	0.2	0.4	0.6	3.6	30	15	1	1.490	0.3	0.3	0.1	28	0	0	0	100
5.11	-134.48	36.0	5257	0.1	0.4	0.5	4.1	30	15	1	1.490	0.3	0.3	0.1	21	0	0	0	100
4.91	-133.72	37.0	5246	0.1	0.3	0.5	4.6	30	16	1	1.490	0.3	0.3	0.0	2	0	0	0	100
4.72	-132.96	38.0	5234	0.1	0.4	0.6	5.2	30	16	1	1.490	0.4	0.4	0.1	18	0	0	0	100
4.53	-132.21	39.0	5222	0.1	0.4	0.6	5.8	30	16	1	1.490	0.4	0.4	0.0	2	0	0	0	100
4.34	-131.45	40.0	5210	0.1	0.5	0.6	6.4	30	16	1	1.490	0.5	0.5	-0.0	-2	0	0	0	100
4.15	-130.69	41.0	5197	0.1	0.5	0.7	7.0	29	16	1	1.490	0.5	0.5	0.1	12	0	0	0	100
3.97	-129.93	42.0	5184	0.1	0.6	0.8	7.8	29	17	1	1.490	0.4	0.4	0.2	33	0	0	0	100

INITIAL LAT(CLAD1) IS 3.76 INITIAL LONGITUDE (CLOD) IS -175.08 BASEMENT AGE(AGEB) IS 120.0
DEPTH OF WATER IS 4950.00 SITE NUMBER IS 166

PDEPH = 5901.80 DEPH= 4950.00 DEPHC = -951.80

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIP	PCT
3.51	-174.31	1.0	4953	7.7	4.5	6.3	6.3	27	17	1	1.490	0.2	0.2	4.3	96	0	0	8	100
3.26	-173.54	2.0	4956	7.8	3.9	4.8	11.1	27	17	1	1.490	0.3	0.3	3.6	92	1	1	7	87
3.01	-172.77	3.0	4959	7.2	3.8	4.0	15.1	27	17	1	1.490	0.4	0.3	3.5	91	2	1	6	81
2.76	-172.00	4.0	4960	7.6	4.0	3.6	18.7	27	18	1	1.490	0.3	0.3	3.7	92	1	1	6	82
2.51	-171.23	5.0	4961	7.6	4.3	3.1	21.7	27	18	1	1.490	0.3	0.3	4.0	92	1	1	7	87
2.26	-170.46	6.0	4961	7.5	4.1	2.1	23.9	27	18	1	1.490	0.4	0.5	3.6	88	1	1	7	87
2.01	-169.69	7.0	4961	9.2	4.4	3.8	27.7	27	18	1	1.490	0.8	0.6	3.8	86	1	1	8	89
1.76	-168.92	8.0	4962	9.1	5.1	4.5	32.3	27	19	1	1.490	0.7	0.9	4.2	82	1	1	8	85
1.51	-168.15	9.0	4964	8.8	5.5	4.8	37.0	27	19	1	1.490	1.3	1.1	4.4	80	2	2	7	77
1.26	-167.38	10.0	4966	9.1	6.0	5.1	42.1	27	19	1	1.490	1.4	1.4	4.6	77	3	4	5	52
1.01	-166.61	11.0	4969	9.3	7.4	6.1	48.2	27	19	1	1.490	1.5	1.5	5.9	80	8	11	-2	-18
0.76	-165.84	12.0	4972	10.8	7.9	6.5	54.7	27	20	1	1.491	1.6	1.4	6.6	83	22	14	-3	-29
0.51	-165.07	13.0	4975	11.3	6.8	7.0	61.8	27	20	1	1.492	1.0	1.2	7.6	86	12	15	-4	-32
0.27	-164.30	14.0	4977	10.8	8.0	6.1	67.9	27	20	1	1.494	1.1	1.2	6.8	85	11	11	0	-2
0.02	-163.53	15.0	4979	10.7	7.8	5.7	73.6	27	20	1	1.495	1.4	1.3	6.5	83	10	10	0	4
-0.23	-162.76	16.0	4980	9.4	8.0	5.6	79.2	27	21	1	1.496	1.4	1.3	6.7	84	10	10	0	-2
-0.47	-161.99	17.0	4981	9.1	7.5	5.2	84.4	27	21	1	1.497	1.1	1.2	6.3	84	9	9	0	-3
-0.72	-161.22	18.0	4981	8.8	7.4	5.2	89.6	27	21	1	1.498	1.1	1.1	6.2	85	9	9	0	2
-0.96	-160.45	19.0	4982	8.7	8.4	5.8	95.4	27	21	1	1.499	1.2	1.2	7.3	86	8	8	1	11
-1.21	-159.67	20.0	4984	8.3	10.1	6.8	102.1	27	22	1	1.500	1.2	1.2	9.0	88	6	7	2	20
-1.45	-158.90	21.0	4985	7.6	10.6	7.0	109.1	27	22	1	1.502	1.1	1.1	9.4	89	6	9	-1	-18
-1.69	-158.13	22.0	4988	7.7	10.9	7.0	116.1	27	22	1	1.503	1.1	1.2	9.6	89	15	13	-5	-65
-1.93	-157.36	23.0	4989	7.0	10.9	7.2	123.3	27	22	1	1.505	1.5	1.4	9.5	87	17	15	-8	-114
-2.17	-156.58	24.0	4989	7.4	10.1	6.5	129.8	27	23	1	1.506	1.7	1.7	8.5	84	13	13	-6	-77
-2.41	-155.81	25.0	4987	7.0	8.2	5.2	135.0	27	23	1	1.507	1.8	1.7	6.5	79	9	9	-2	-24
-2.65	-155.04	26.0	4985	6.8	7.1	4.4	139.4	27	23	1	1.508	1.6	1.6	5.5	78	4	4	2	36
-2.89	-154.26	27.0	4982	6.2	6.8	4.1	143.5	27	23	1	1.509	1.3	1.4	5.4	79	0	1	5	78
-3.13	-153.49	28.0	4979	5.6	6.9	4.1	147.6	27	24	1	1.510	1.3	1.5	5.4	78	0	0	6	100
-3.36	-152.71	29.0	4975	4.9	6.1	3.8	151.4	27	24	1	1.511	1.9	1.7	4.4	72	0	0	5	100
-3.60	-151.94	30.0	4970	4.3	5.5	3.4	154.8	27	24	1	1.512	2.0	2.0	3.5	63	0	1	3	76
-3.83	-151.16	31.0	4964	3.5	4.5	2.8	157.6	27	24	1	1.513	2.1	2.1	2.5	54	3	2	1	34
-4.06	-150.39	32.0	4958	2.8	4.2	2.5	160.1	27	25	1	1.514	2.1	2.2	2.0	47	4	5	-2	-64
-4.29	-149.61	33.0	4951	1.9	3.2	2.0	162.1	27	25	1	1.515	2.4	2.1	1.1	35	7	6	-4	-197
-4.52	-148.83	34.0	4944	1.0	2.8	1.7	163.8	27	25	1	1.516	1.8	2.1	0.7	25	6	6	-5	-492
-4.75	-148.05	35.0	4935	0.8	1.6	0.9	164.7	27	25	1	1.516	2.2	2.0	-0.5	-31	5	5	-4	-557
-4.97	-147.27	36.0	4925	0.4	1.1	0.7	165.4	27	25	1	1.516	2.1	2.1	-0.9	-83	4	4	-4	-892
-5.20	-146.49	37.0	4916	0.3	0.8	0.5	165.8	27	26	1	1.516	1.9	1.9	-1.1	-131	3	3	-3	****
-5.42	-145.71	38.0	4906	0.1	0.9	0.5	166.4	27	26	1	1.517	1.7	1.7	-0.8	-95	2	2	-2	****
-5.64	-144.93	39.0	4895	0.1	0.7	0.4	166.8	26	26	1	1.517	1.6	1.6	-0.9	-130	1	1	-1	****
-5.86	-144.15	40.0	4885	0.1	0.5	0.3	167.1	26	26	1	1.517	1.5	1.6	-1.0	-187	0	0	0	-499
-6.08	-143.36	41.0	4873	0.0	0.5	0.3	167.4	26	27	1	1.517	1.6	1.8	-1.3	-270	0	0	0	100
-6.30	-142.58	42.0	4862	0.0	0.4	0.2	167.6	26	27	1	1.517	2.2	2.2	-1.8	-438	0	0	0	100

INITIAL LAT(CLAD1) IS 10.66 INITIAL LONGITUDE (CLOD) IS 173.55 BASEMENT AGE(ACEB) IS 110.0
DEPTH OF WATER IS 5420.00 SITE NUMBER IS 168

PDEPH = 5873.76 DEPH= 5420.00 DEPHC = -453.76

LAT	LONG	AGE	DEPTH	INT CACO3	UNCOMP THICKNESS	COMPACTED THICKNESS	CUMUL THICKNESS	ID	IC	IB	SOUND VELOC	ROPH	AV	DIFF	PCT	CA	AV	DIF	PCT
10.42	174.33	1.0	5416	0.0	0.0	0.0	0.0	32	10	1	1.490	1.8	1.8	-1.8	****	0	0	0	****
10.17	175.11	2.0	5413	0.0	0.0	0.0	0.0	32	10	1	1.490	0.0	0.6	-0.6	****	0	0	0	****
9.93	175.89	3.0	5409	0.0	0.0	0.0	0.0	32	11	1	1.490	0.1	0.1	-0.1	****	0	0	0	****
9.68	176.67	4.0	5405	0.0	0.0	0.0	0.0	32	11	1	1.490	0.1	0.1	-0.1	****	0	0	0	****
9.43	177.45	5.0	5400	0.0	0.0	0.0	0.0	32	11	1	1.490	0.0	0.0	-0.0	****	0	0	0	100
9.19	178.22	6.0	5396	0.0	0.0	0.0	0.0	31	11	1	1.490	0.0	0.1	-0.1	****	0	0	0	100
8.94	179.00	7.0	5391	0.1	0.0	0.0	0.0	31	12	1	1.490	0.2	0.1	-0.1	****	0	0	0	100
8.69	179.77	8.0	5386	0.1	0.0	0.0	0.0	31	12	1	1.490	0.2	0.2	-0.2	****	0	0	0	100
8.44	-179.45	9.0	5381	0.1	0.0	0.0	0.0	31	12	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
8.19	-178.68	10.0	5376	0.1	0.0	0.0	0.0	31	12	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
7.94	-177.90	11.0	5371	0.1	0.0	0.0	0.0	31	13	1	1.490	0.2	0.2	-0.2	****	0	0	0	100
7.59	-177.13	12.0	5365	0.1	0.0	0.0	0.0	31	13	1	1.490	0.2	0.2	-0.2	****	0	0	0	100
7.45	-176.36	13.0	5359	0.1	0.0	0.0	0.0	31	13	1	1.490	0.3	0.3	-0.3	****	0	0	0	100
7.20	-175.58	14.0	5353	0.1	0.0	0.0	0.0	31	13	1	1.490	0.3	0.2	-0.2	****	0	0	0	100
6.94	-174.81	15.0	5346	0.1	0.0	0.0	0.0	31	14	1	1.490	0.1	0.2	-0.2	****	0	0	0	100
6.69	-174.04	16.0	5340	0.1	0.0	0.0	0.0	31	14	1	1.490	0.1	0.1	-0.1	****	0	0	0	100
6.44	-173.27	17.0	5333	0.1	0.0	0.1	0.1	31	14	1	1.490	0.2	0.2	-0.1	-241	0	0	0	100
6.19	-172.50	18.0	5326	0.1	0.3	0.4	0.5	31	14	1	1.490	0.2	0.2	0.1	39	0	0	0	100
5.94	-171.73	19.0	5319	0.2	0.6	0.9	1.3	31	15	1	1.490	0.1	0.1	0.5	77	0	0	0	100
5.69	-170.96	20.0	5313	0.2	1.0	1.5	2.8	31	15	1	1.490	0.1	0.2	0.9	84	0	0	0	100
5.44	-170.19	21.0	5307	0.2	1.5	2.1	4.9	31	15	1	1.490	0.3	0.2	1.3	85	0	0	0	100
5.19	-169.42	22.0	5301	0.2	2.1	2.8	7.7	31	15	1	1.490	0.3	0.4	1.8	83	0	0	0	100
4.94	-168.65	23.0	5296	0.2	2.8	3.3	11.1	30	16	1	1.490	0.5	0.4	2.3	84	0	0	0	100
4.69	-167.89	24.0	5291	0.2	3.2	3.4	14.4	30	16	1	1.490	0.5	0.5	2.7	85	0	0	0	100
4.45	-167.12	25.0	5285	0.2	3.1	2.9	17.3	30	16	1	1.490	0.4	0.4	2.7	86	0	0	0	100
4.20	-166.35	26.0	5279	0.2	3.4	2.7	20.1	30	16	1	1.490	0.4	0.5	3.0	86	0	0	0	100
3.95	-165.58	27.0	5272	0.3	4.1	2.6	22.6	30	17	1	1.490	0.6	0.5	3.6	87	0	0	0	100
3.70	-164.81	28.0	5265	0.3	5.0	3.3	26.0	30	17	1	1.490	0.6	0.6	4.4	89	0	0	0	100
3.45	-164.04	29.0	5258	0.3	5.3	4.7	30.6	30	17	1	1.490	0.5	0.5	4.7	90	0	0	0	100
3.21	-163.28	30.0	5252	0.4	5.3	4.6	35.2	30	17	1	1.490	0.5	0.5	4.8	90	0	0	0	100
2.96	-162.51	31.0	5244	0.4	4.8	4.0	39.3	30	18	1	1.490	0.5	0.5	4.3	89	0	0	0	100
2.71	-161.74	32.0	5237	0.5	4.7	3.9	43.2	30	18	1	1.490	0.5	0.5	4.2	89	0	0	0	100
2.47	-160.97	33.0	5228	0.6	4.0	3.3	46.5	30	18	1	1.490	0.5	0.5	3.5	87	0	0	1	100
2.22	-160.20	34.0	5216	0.7	3.7	3.1	49.6	30	18	1	1.490	0.5	0.6	3.1	84	0	0	1	100
1.98	-159.44	35.0	5206	0.7	2.2	1.8	51.4	30	19	1	1.490	0.8	0.7	1.5	68	0	0	1	100
1.74	-158.67	36.0	5194	0.6	1.7	1.4	52.8	29	19	1	1.491	0.8	0.8	0.9	51	0	0	1	100
1.50	-157.90	37.0	5181	0.6	1.3	1.1	53.8	29	19	1	1.491	0.9	1.0	0.3	21	0	0	1	100
1.25	-157.13	38.0	5168	0.6	1.5	1.2	55.1	29	19	1	1.491	1.4	1.5	0.0	1	0	0	1	100
1.01	-156.36	39.0	5154	0.6	1.3	1.1	56.1	29	19	1	1.491	2.2	1.9	-0.6	-45	0	0	1	100
0.77	-155.59	40.0	5140	0.6	1.2	1.0	57.1	29	20	1	1.491	2.2	2.2	-1.0	-81	0	0	1	100
0.54	-154.82	41.0	5125	0.8	1.3	1.0	58.1	29	20	1	1.492	2.2	2.2	-0.9	-75	0	0	1	100
0.30	-154.05	42.0	5110	0.8	1.3	1.0	59.1	29	20	1	1.492	2.2	2.2	-0.9	-74	0	0	1	100

ERROR IN UNCOMPACTED INTERVAL THICKNESS (PERCENT)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
65	79	71	66	57	53	38	36	38	40	54	71	85	90	89	85	79	75	69	71	73	75
66	73	67	65	64	65	62	63	58	50	49	61	67	68	68	68	67	61	57	64	72	75
68	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
69	100	100	100	100	100	100	100	82	66	53	62	65	68	71	74	85	90	74	70	57	54
70	-95	-73	-57	-19	39	52	58	63	69	57	52	36	38	41	59	68	60	31	22	-2	-13
71	47	39	35	31	38	28	30	20	12	-1	4	-71	-113	-143	-96	-16	13	45	56	56	50
72	36	10	-9	-3	14	6	-1	-18	-35	-57	-48	-65	-69	-84	-76	-41	-38	-14	6	23	21
73	-103	-93	-44	33	45	49	48	53	57	57	49	50	59	59	44	4	-83	-63	-46	11	-9
74	100	100	100	87	73	64	69	74	67	68	72	35	10	-14	-19	25	49	42	39	28	15
75	****	****	****	****	****	****	****	****	****	****	****	****	100	46	-6	-13	15	24	18	-45	-100
77	37	17	14	-9	-12	-48	-69	-63	-94	-58	-17	3	22	14	27	6	-2	11	37	33	-22
78	****	****	****	100	100	100	100	100	100	100	100	91	65	35	45	20	28	18	56	17	-8
79	56	22	-6	-17	-14	-20	-18	1	8	31	57	38	19	-3	4	19	11	31	46	66	72
80	-2	-35	0	-4	17	0	44	71	71	77	73	72	58	21	-5	-14	-6	23	49	50	40
82	50	36	33	27	-63	-97	-22	****	****	****	****	****	****	****	****	****	****	****	****	****	****
159	****	****	****	****	****	****	****	-1641	-512	-263	-117	-50	13	30	41	43	19	-16	-36	-45	-31
160	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	-486
161	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	100	100
162	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	100
163	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
164	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****
166	95	92	91	92	92	88	86	82	80	77	80	83	86	85	83	84	84	85	86	88	89
168	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	****	-241	39	77	84	85

ERROR IN UNCOMPACTED INTERVAL THICKNESS (PERCENT)

	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
65	75	73	78	84	98	97	98	98	95	91	80	68	52	-11	-101	-237	-204	-237	-280	-347	-422
66	76	75	71	60	58	63	75	77	82	80	79	72	66	30	-9	-72	-86	-156	-202	-215	-237
68	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
69	47	51	53	44	33	24	20	8	9	6	13	-7	-5	-42	-34	-22	39	16	6	-12	23
70	-22	-9	1	-3	-8	-12	-23	-36	-44	-44	-12	-5	31	15	64	76	100	100	100	100	100
71	26	10	-1	-11	-23	-40	-35	-30	-9	-12	11	0	25	-5	24	17	37	5	9	33	56
72	23	27	23	3	-8	-3	27	45	68	70	79	79	83	71	62	58	67	80	87	100	100
73	-2	-2	-3	-15	-7	5	8	-6	-17	-23	-10	-24	-11	-71	-65	-85	-12	23	75	100	100
74	-21	-16	-26	-34	-38	-7	-12	-31	-51	-52	-20	-24	22	31	96	94	95	94	93	94	94
75	-86	-36	-2	-30	-26	-7	4	-11	-18	-25	-25	-37	5	34	100	100	*****	*****	*****	*****	*****
77	-45	-39	-39	-28	-14	35	29	17	24	16	7	-39	-75	-215	-157	-58	100	100	100	100	*****
78	3	11	11	1	39	65	57	40	27	-1	-9	-37	-56	-193	*****	*****	*****	*****	*****	*****	*****
79	86	95	100	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
80	35	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
82	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
159	-5	51	92	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
160	-164	-39	-25	1	14	36	24	10	2	1	17	4	-21	*****	*****	*****	*****	*****	*****	*****	*****
161	100	-9	-79	-111	-50	-28	-4	-26	-1	-38	-57	-145	-150	-198	-118	-49	-31	-40	-27	0	6
162	100	100	100	100	100	100	100	100	100	45	29	-32	-12	-91	-66	-55	13	30	44	43	27
163	*****	100	100	100	100	85	57	44	42	57	67	72	79	72	68	56	45	39	29	38	28
164	*****	*****	*****	*****	*****	*****	*****	*****	-65	9	36	40	47	28	21	2	18	2	-2	12	33
166	89	87	84	79	78	79	78	72	63	54	47	35	25	-31	-83	-131	-95	-130	-187	-270	-438
168	83	84	85	86	86	87	89	90	90	89	89	67	84	68	51	21	1	-45	-81	-75	-74

ERROR IN INTERVAL CARBONATE(PERCENT)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
65	100	100	100	-70	-247	-451	-377	-341	-294	-249	-211	-141	-105	-19	1	-58	-179	-199	-154	-100	-112
66	100	100	48	7	-37	8	61	100	100	100	100	48	45	42	100	100	100	100	100	100	100
68	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
69	100	100	100	100	100	100	100	78	58	41	40	59	50	66	76	95	53	11	-26	-24	-27
70	100	100	100	100	26	0	0	10	48	40	22	0	4	29	45	57	31	12	-4	1	-3
71	-19	-3	-5	5	7	6	14	3	-8	-9	-10	-4	-4	-2	8	0	0	-2	1	3	4
72	0	0	-7	-6	-10	-22	-1	-4	-14	-18	-22	-12	-12	-12	-5	-12	-9	-5	1	5	5
73	-58	-51	-64	-45	-27	-19	11	6	12	27	16	6	-11	-12	-4	-10	-5	-4	0	3	2
74	100	100	*****	*****	*****	100	*****	*****	*****	100	100	100	98	-21	-44	-22	53	55	19	-15	-12
75	*****	*****	*****	*****	*****	*****	*****	*****	*****	100	100	100	23	14	-3	-11	-29	-26	-16	-9	-7
77	3	5	-4	-1	-12	-25	-10	-12	-15	-22	-25	-19	-17	-16	-7	-7	-6	-5	-4	-2	-3
78	100	100	100	100	100	100	100	100	100	100	100	61	24	-11	-1	-2	6	10	14	13	7
79	14	34	35	31	24	15	23	14	12	14	16	16	7	4	11	8	6	6	7	10	4
80	-23	-6	29	70	69	33	12	11	9	11	8	15	15	15	16	6	6	6	9	8	14
82	17	21	13	17	17	13	25	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
153	*****	*****	*****	*****	*****	*****	*****	*****	*****	-1198	-205	-40	30	65	81	86	85	85	78	70	62
160	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	100	100	-969	-664	-2165	-1244	-396	-243	-156
161	*****	*****	*****	*****	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
162	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
163	*****	*****	*****	*****	*****	*****	*****	100	100	100	100	100	100	100	100	100	100	100	100	100	100
164	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	100	100	100	100	100	100
166	100	87	81	82	87	87	89	85	77	52	-18	-29	-32	-2	4	-2	-3	2	11	20	-18
168	*****	*****	*****	*****	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

ERROR IN INTERVAL CARBONATE (PERCENT)

	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
65	-112	-57	21	100	100	100	100	100	100	100	-94	-335	-609	-7674	*****	*****	*****	*****	*****	*****	*****
66	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
68	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	100	100	100	100	100	100	100	100	100	100	100
69	-24	-27	-20	-25	-31	-28	-22	2	15	18	7	-9	25	53	100	100	100	100	100	100	100
70	5	4	17	12	9	7	4	1	-1	3	5	8	10	3	5	48	100	100	100	100	100
71	10	3	7	-1	0	0	2	4	6	8	13	14	21	18	-16	-22	-42	-76	-94	-87	-79
72	10	3	9	3	3	2	2	-1	-2	-2	0	-2	5	2	-28	-15	-5	25	60	100	100
73	7	0	6	0	0	-1	-1	-2	-3	-3	1	2	10	14	12	15	-12	-27	21	100	100
74	-2	-5	6	6	10	10	8	5	3	2	3	19	39	52	30	25	10	-15	-31	-31	-30
75	1	-4	4	-1	3	2	2	2	3	2	6	8	16	40	56	100	*****	*****	*****	*****	*****
77	1	-4	3	-3	-2	-2	-2	-5	-6	-3	2	0	1	15	29	81	100	100	100	100	*****
78	6	1	8	3	3	12	19	15	4	-6	-2	-3	3	-5	*****	*****	*****	*****	*****	*****	*****
79	39	68	100	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
80	31	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
82	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
159	55	38	21	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
160	-64	-32	-15	-11	-12	-11	-15	-16	-15	-13	-9	-10	-3	*****	*****	*****	*****	*****	*****	*****	*****
161	47	11	-3	2	2	-4	-9	-12	-13	-14	-10	-8	2	3	-29	-35	-12	1	56	55	77
162	*****	100	100	100	100	100	100	100	51	10	-17	-14	3	5	4	39	70	82	79	87	96
163	100	100	100	100	100	100	100	100	98	97	98	99	100	99	97	97	98	100	100	100	100
164	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
166	-65	-114	-77	-24	36	78	100	100	76	34	-64	-197	-492	-557	-892	-1035	-1426	-1282	-499	100	100
168	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

APPENDIX III

Subroutines

by

J. L. Matthews

Subroutine ALPHA (V, I, J, K, L)

Purpose

Subroutine ALPHA is used by ROPH to convert variables whose value is less than 1000.0 from floating point format, rounded to the nearest tenth, to alphameric format.

Variables

In

V = variable in floating point format to be changed to alphameric format.

Out

I = subscript for the unit's division

J = subscript for the ten's division

K = subscript for the hundred's division

L = subscript for the tenth's division

Method

Subroutine ALPHA rounds the incoming variable (floating point) to the nearest tenth of a unit, then by a series of tests determines the hundred's division, the ten's division, the unit's division, and the tenth's division of the variable and assigns each division a variable subscript. The subscript refers to a one-dimensional array of integers and characters entered with an alphameric format in the main program. Subroutine ALPHA, by determining the appropriate subscript for each division, allows the main program to transform the number to alphameric format by reference to the alphameric array. As an example, assume that 95.2 is to be converted from floating point to alphameric format. Array IG (JI) already has been read into the main program with the following correspondence of subscript and value:

Subscript of IG	1	2	3	4	5	6	7	8	9	10	11	12
Alphameric value	0	1	2	3	4	5	6	7	8	9	.	*

Subroutine ALPHA will determine that the hundred's division is 0 and assign the subscript 1 to variable K, the ten's division is 9 and assigns the subscript 10 to variable J, the unit's division is 5 and assigns the subscript 6 to variable I, and the tenth's division 2 and assigns the subscript 3 to variable L. The main program will write 5 variables of one character each -- IG(J1), IG(J2), IG(J3), IG(11), and IG(J4), where J1 corresponds with K, J2 with J, J3 with I, and J4 with L. Note that the fourth variable always has the subscript 11, and causes a decimal to be printed. If a value, sent to subroutine ALPHA, is equal or greater than 1000.0, all subscript variables of subroutine ALPHA are assigned the value 12, which causes asterisks to print for all 4 variables.

Subroutine COUNT (BLODF, CLODF, BBPPF, BBF, IFLAG, BBPF, CLADF, BLADF)

Purpose

Subroutine COUNT is called by subroutine ROCCW and determines the included angle ABC' of the spherical triangle ABC' (Figure 1.4) preparatory to solution of the triangle by subroutine CPRIM and sets flags used by ROCCW to determine the new latitude and longitude of the rotated point.

Variables

In

BLODF = longitude of pole

CLODF = longitude of point to be rotated

BBPPF = angular distance of rotation (CBC', Figure 1.4)

BBF = included angle of spherical triangle (ABC, Figure 1.4)

CLADF = latitude of point to be rotated

BLADF - latitude of pole

Out

BBPF = angle (ABC', Figure 1.4) to be used in solution second spherical triangle by subroutine CPRIM

IFLAG = value is set at -1, 1, or 2; used by subroutine ROCCW to determine the latitude and longitude of rotated point.

Method

If the position of the point C relative to the pole B is as illustrated in Figure 1.4, determination of angle ABC' is made by addition of angles ABC and CBC'; however, should the relative positions of the point and pole be interchanged, subtraction is appropriate. Additional complications will arise if the rotated point crosses the line of longitude at 360°, or if it crosses the line of longitude through the pole of rotation.

Figure 3.1 illustrates the algorithms used by COUNT to calculate angle ABC'.

Subroutine CPRIM (AB, BS, CS, BB, AS, CB)

Purpose

This subroutine solves a spherical triangle, given two sides and an included angle. Used in programs ROPH and ESP for rotation of points. Calling subroutine is ROCCW.

Variables

In

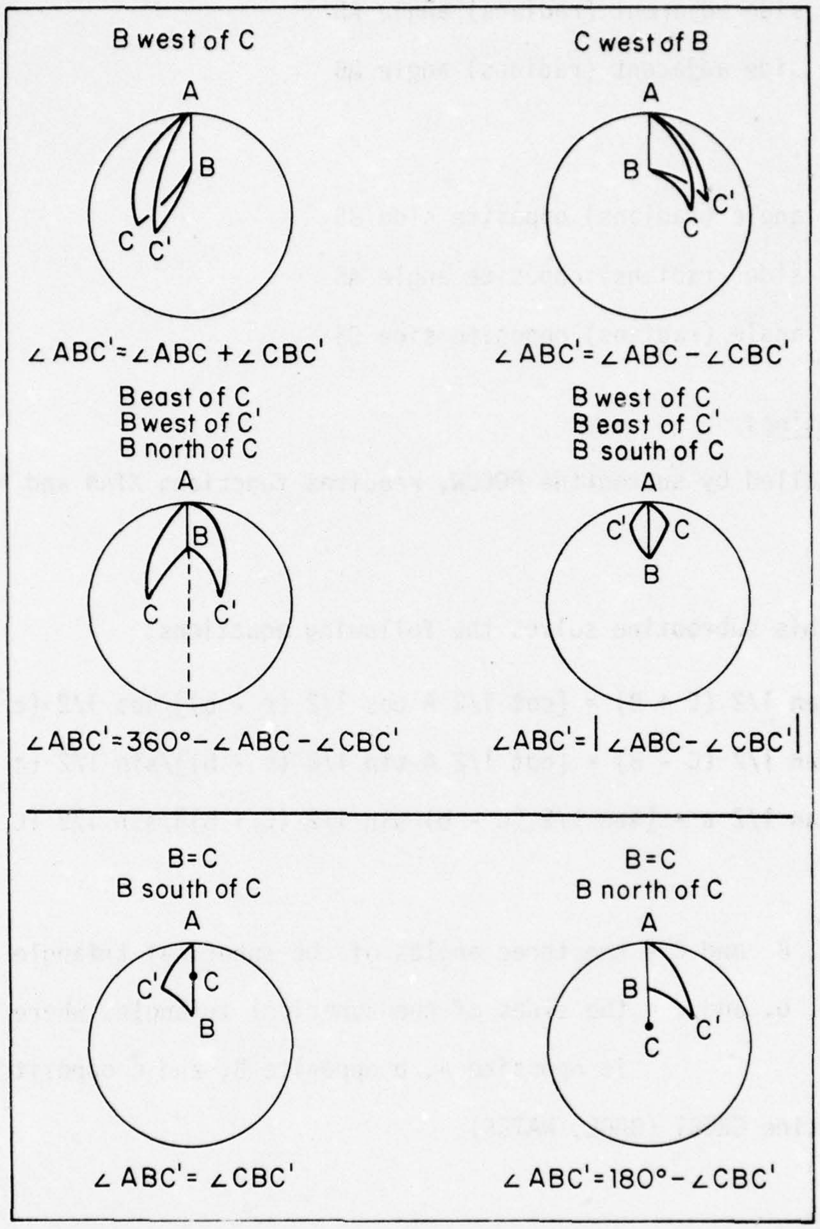

Figure 3.1. Stereographic projection of spin axis A, pole of rotation B, and Point C to be rotated to point C', showing various determinations of angle ABC', given angle ACB and angle CBC'. The solution for angle ABC' depends on the longitude of points C and C' relative to longitude of pole B. The latitude of the points and pole must be considered where points C and C' lie on opposite sides of the line of longitude passing through point B and where the longitude of C and B are equal.

AB = included angle of spherical triangle (radians)

BS = side adjacent (radians) angle AB

CS = side adjacent (radians) angle AB

Out

BB = angle (radians) opposite side BS

AS = side (radians) opposite angle AB

CB = angle (radians) opposite side CS

Subroutines

Called by subroutine ROCCW, requires functions XTAN and FTAN.

Method

This subroutine solves the following equations:

$$\tan 1/2\,(C + B) = [\cot 1/2\,A \cos 1/2\,(c - b)]/\cos 1/2\,(c + b)$$

$$\tan 1/2\,(C - B) = [\cot 1/2\,A \sin 1/2\,(c - b)]/\sin 1/2\,(c + b)$$

$$\tan 1/2\,a = [\tan 1/2\,(c - b) \sin 1/2\,(C + B)]/\sin 1/2\,(C - B)$$

where:

A, B, and C = the three angles of the spherical triangle

a, b, and c = the sides of the spherical triangle, where side a is opposite A, b opposite B, and c opposite C.

Subroutine CRUST (GAGE, WATER)

Purpose

This subroutine determines the elevation of the crust from the subsidence curve, given the age of the crust. Subroutine CRUST is called by programs ROPH and ESP.

Variables

In

GAGE = age (my) of crust

Out

WATER = elevation (m) of crust

Method

Subroutine CRUST solves one of three polynomial equations to determine the elevation of the crust, using the subsidence curve of Sclater and Detrick (1973). Dividing the subsidence curve in three parts -- 0 to 25 mybp, 25 to 50 mybp, and older than 50 mybp -- gives a better fitting of the data than a fitting by a single polynomial.

The equations are:

0 - 25 mybp

$$Q = 2716.3934 + 143.5062Y - 9.21059Y^2 + 0.3957787Y^3 - 0.0063777Y^4$$

25 - 50 mybp

$$Q = 3381.7032 + 35.057943Y - 0.0251748Y^2$$

> 50 mybp

$$Q = 2577.2461 + 80.83089Y - 0.7438308Y^2 + 0.0031010Y^3 - 0.0000049Y^4$$

where:

Q = elevation of crust

Y = age of crust

Subroutine ROCCW (BLADX, BLODX, CLADX, CLODX, BBPPX, XCLAD, XCLOD)

Purpose

Given the latitude and longitude of a point on a sphere, the pole of rotation, and the angular distance of rotation, this subroutine rotates the point counterclockwise and determines the new latitude and longitude of the point.

Variables

In

BLADX = latitude (deg.) of pole of rotation

BLODX = longitude (deg.) pole of rotation

CLADX = latitude (deg.) point to be rotated

CLODX = longitude (deg.) point to be rotated

BBPPX = angular distance (deg.) around pole points are to be rotated

Out

XCLAD = latitude (deg.) of point after rotation

SCLOD = longitude (deg.) of point after rotation

Subroutines

Called by program ROPH and ESP. Calls subroutines COUNT and CPRIM, which requires functions XTAN and FTAN.

Method

Subroutine ROCCW rotates a point counterclockwise and determines its subsequent latitude and longitude by solution of 2 spherical triangles, given 2 sides and the included angle of each triangle. In Figure 1.4, the included angle CAB is the absolute difference of the longitude of

point C and pole B. Side b is 90° minus the latitude of point C, and c is 90° minus the latitude of pole B. Subroutine CPRIM, called by ROCCW, uses the included angle CAB and the 2 sides, b and c, to solve for side a and angle ABC of triangle ABC. For triangle ABC', side a has the same value as before. Because rotation around pole B requires that point C trace a line of latitude around the pole, side a and a' must be equal. Angle ABC is known from the solution of triangle ABC. Angle CBC' is the angular distance of rotation, determined by the main program, and is equal to the rate of rotation (deg/my) times the duration (my) of the rotation; thus, the included angle ABC' equals angle ABC plus angle CBC', the addition being done by subroutine COUNT (for some rotations, angle ABC' is not a simple addition of angles). Subroutine CPRIM solves this second triangle, ABC', using side a', side c, and included angle ABC' to give side b' and angle C'AB. The latitude of C' is 90° minus side b'; the longitude of C' is the longitude of pole B plus or minus angle C'AB.

Subroutine TABLE (AGE, DEPTH, CLAD, TESTB, MFLAG, *ID*, *IC*, *IB*)

Purpose

Using values determined by program ESP for depth of water, latitude and age of the point, this subroutine transforms the values to subscripts ID, IC, and IB for use by arrays ALITH and ATHIC.

Variables

In

AGE = age (mybp) of the point for the current iteration. This variable is compared with variable TESTB to set the value of variable IB.

DEPTH = depth of water (m) for point after rotation.

CLAD = latitude (deg.) of point after rotation.

TESTB = age (mybp) at which shift is made from first set of grids to second set.

Out

MFLAG = a flag that is set if a rotated point plots off the paper. Used by main program to terminate loop.

ID = water depth, coded in 100 m intervals from 2300 to 6300 m. Value of 2300 m is 1, 6300 m is 40.

IC = latitude, coded in 1° intervals from 20°N to 20°S. A latitude of 20°N is 1, 20°S is 40.

IB = grid number, one set of 2 grids is used, but by changing the read statement, 2 sets could be used. Variable TESTA specifies which set of grids is to be used.

Features

Prints warnings if any of the points fall outside the limits of the latitude-depth-of-water grid. Sets flag (MFLAG) that is used by main program to terminate loop if point falls outside the grid.

Method

Permissible values for the depth of water range from 2300 m to 6300 m. The depth range 2300 to 2400 m is assigned a subscript ID = 1. Successive intervals of 100 m receive a successively higher index number, progressing to subscript of 40, which defines the range 6200 to 6300 m. The subscript is determined by multiplying the depth of water times .01, truncating the decimal fraction, and converting the result to an integer, which sets the subscript ID.

Subscript IC marks the latitude, $19^{o}N$ to $20^{o}N$, receiving the subscript 1, 19^{o} to $20^{o}S$ the subscript 40. To accomplish this transformation, the latitude is stripped of its decimal fraction. If the latitude is southern, 21 is added to the absolute value of the stripped transformation; if northern, the transformed value is subtracted from 20.

Subscript IB denotes the set of grids to be used. The value of IB will be 1 unless the age of the iteration point exceeds the test value TESTA, which is entered in the program ESP.

Subroutine XLOOK (VAL, ID, IC, IB, PHEPH, CLAD, VVAL)

Purpose

The subroutine is used by ESP to interpolate values on the latitude-depth-of-water grids ALITH and ATHIC.

Variables

In

VAL = value extracted from either array ALITH or ATHIC

ID = subscript for depth of water used by VAL

IC = subscript for latitude used by VAL

IB = subscript for grid number, which depends on age used by VAL

PDEPH = depth of water of point

CLAD = latitude of point

Out

VVAL = interpolated solution from either ALITH or ATHIC

Method

The arrays ATHIC and ALITH are constructed so that the values for each set of coordinates marks the center of a grid, Figure 2.1. Thus,

for example, in Figure 2.1, 12.2 (ID = 19 and IC = 23) indicates the rate of deposition at 4150.0 m depth of water and =2.5^{O} latitude. Any point not at the center of this or any other grid requires interpolation. Figure 2.2, an enlarged portion of Figure 2.1, shows the direction in which interpolation must move, if the point c falls in the first quadrant of the grid ID = 19, IC = 23. As an example, consider the depth coordinate of point c to be 4150.0 m and the latitude to be -2.75^{O}. Interpolation will occur between ID = 19, IC = 23, and ID = 19, IC = 23 which establishes the value of point a. The value of point b is interpolated between ID = 18, IC = 23 and ID = 18, IC = 24. Now interpolation between a and b gives the answer, the value at point c. Points that plot in the other quadrants follow the same scheme, although a different set of 4 coordinates must be used for each quadrant:

Quadrant	Point	Grids
1	a	ID and IC, ID and IC+1
	b	ID-1 and IC, ID-1 and IC+1
2	a	ID and IC, ID and IC-1
	b	ID-1 and IC, ID-1 and IC-1
3	a	ID and IC, ID and IC-1
	b	ID+1 and IC, ID+1 and IC-1
4	a	ID and IC, ID and IC+1
	b	ID+1 and IC, ID+1 and IC+1

Function FTAN(D)

Purpose

To compute tangent of an angle from the sin and cos of the angle; used by machines with no tangent function.

In

D = angle in radian

Out

FTAN = tangent of angle in radians

Function XTAN(XT)

Purpose

To convert arc tangent with negative value to positive angles less than 180°

Variables

In

XT = angle in radians

Out

XTAN = angle (radians) that is positive and equal to or less than 90°

```
      SUBROUTINE ROCCW(BLADX,BLODX,CLADX,CLODX,BBPPX,XCLAD,XCLOD)
      IF(CLODX) 400,400,410
  400 CLODX = CLODX + 360.
  410 IF(BLODX) 420,420,430
  420 BLODX = BLODX + 360.
  430 AB = ABS(BLODX - CLODX)
      IF(AB) 422,421,422
  421 AB = .00001
      GO TO 490
  422 IF(AB - 180.) 460,470,480
  460 AB = AB * .0174533
      GO TO 490
  470 AB = 179.99999 * .0174533
      GO TO 490
  480 AB = (360. - AB) * .0174533
  490 BS = (90. - CLADX) * .0174533
      CS = (90. - BLADX) * .0174533
      CALL CPRIM (AB,BS,CS,BB,AS,CB)
      BBX = BB
      CALL COUNT(BLODX,CLODX,BBPPX,BBX,IFLAG,BBPX,CLADX,BLADX)
      CSP = CS
      ASP = AS
      BBP = BBPX
      CALL CPRIM (BBP,CSP,ASP,CBP,BSP,ABP)
      IF(IFLAG) 1400,1500,1600
 1400 XCLOD = BLODX - (ABP/ .0174533)
      GO TO 1616
 1500 XCLOD = BLODX - 180.
      GO TO 1616
 1600 IF(IFLAG - 1) 1610,1610,1620
 1610 XCLOD = BLODX + (ABP/ .0174533)
      IF(360. - XCLOD) 1615, 1615,1616
 1615 XCLOD = XCLOD - 360.
      GO TO 1616
 1620 XCLOD = BLODX
 1616 XCLAD = 90. - (BSP / .0174533)
      RETURN
      END
```

```
      SUBROUTINE COUNT(BLODF,CLODF,BBPPF,BBF,IFLAG, BBPF,CLADF,BLADF)
  503 DIFF = CLODF - BLODF
      ADIFF = ABS (DIFF)
      IF(DIFF) 500, 510, 520
  500 IF(ADIFF - 180.) 530, 560, 550
  530 BBPF = BBF + BBPPF
      IF(BBPF - (180. * .0174533)) 601,605,610
  601 IFLAG = -1
      GO TO 600
  605 BBPF= 179.999 * .0174533
      IFLAG = 2
      GO TO 600
  610 BBPF = (360. *.0174533) -BBPF
      IFLAG = 1
      GO TO 600
  520 IF(ADIFF - 180.) 550, 560, 530
  550 IF(BBPPF - BBF) 551, 552, 553
  551 BBPF = BBF - BBPPF
      IFLAG = 1
      GO TO 600
  552 BBPF = .00001
      IFLAG = 0
      GO TO 600
  553 BBPF = BBPPF - BBPF
      IFLAG = -1
      GO TO 600
  510 IF(BLADF - CLADF) 560, 570, 540
  540 BBPF = (180. * .0174533) - BBPPF
      IFLAG = 1
      GO TO 600
  560 BBPF = BBPPF
      IFLAG = -1
      GO TO 600
  570 BBPF = 0.0
  600 RETURN
      END
```

```
      SUBROUTINE CRUST(GAGE, WATER)
       IF(GAGE - 25.) 100, 100, 200
  100 WATER = 2716.3934 + 143.5062*GAGE - 9.21059*GAGE**2. + .3957787
     1*GAGE**3. - .0063777*GAGE**4.
      RETURN
  200 IF (GAGE - 50.) 300,300,400
  300 WATER = 3381.7032 + 35.057943*GAGB - .0251748*GAGE**2.
      RETURN
  400 WATER = 2577.2461 + 80.83089*GAGE - .7438308*GAGE**2. + .0031010*
     1GAGE**3. - .0000049311*GAGE**4.
      RETURN
      END
```

```
      SUBROUTINE TABLE(AGE,DEPTH,CLAD,TESTA,MFLAG,ID,IC,IB)
      MFLAG = 0
      IF(AGE - (TESTA + .00001)) 20,20,10
   10 IB = 2
      GO TO 30
   20 IB = 1
   30 ID = DEPTH *.01
      ID = ID - 22
      IF(ID) 820, 820,821
  820 WRITE(2,819)
  819 FORMAT(2X, 'ID IS LESS THAN 1, DEPTH IS LESS THAN 2300 METERS')
      MFLAG = 1
      GO TO 500
  821 IF(ID - 40) 826, 826, 824
  824 WRITE(2, 825)
  825 FORMAT(2X,'ID IS GREATER THAN 40, DEPTH IS GREATER THAN 6300M.')
      MFLAG = 1
      GO TO 500
  826 IC = CLAD
      IF(CLAD) 100,101,101
  100 IC = IABS(IC) + 21
      GO TO 103
  101 IC = 20 - IC
  103 IF(IC) 810,810,812
  810 WRITE(2, 813)
  813 FORMAT(2X,'IC IS NEGATIVE, LAT. OF POINT IS GREATER THAN 20 DEG')
      MFLAG = 1
      GO TO 500
  812 IF(IC - 40) 500,500,815
  815 WRITE(2, 814)
  814 FORMAT(2X,'IC IS GREATER THAN 40, LAT. OF POINT IS LESS THAN -20 D
     1EG')
      MFLAG = 1
  500 RETURN
      END
```

```
      SUBROUTINE CPRIM (AB,BS,CS,BB,AS,CB)
      BPC = (BS + CS) / 2.
      RAD90 = 90. * .0174533
      RAD18 = 180. * .0174533
      IF(BPC - RAD90) 300,300,310
  300 SBPC = SIN(BPC)
      CBPC = COS(BPC)
      GO TO 320
  310 SBPC = SIN(RAD18 - BPC)
      CBPC = -COS(RAD18 - BPC)
  320 BMC = ABS(BS - CS) / 2.
      IF (BMC - RAD90) 330,330,340
  330 SBMC = SIN(BMC)
      CBMC = COS(BMC)
      GO TO 350
  340 SBMC = SIN(RAD18 - BMC)
      CBMC = - COS(RAD18 - BMC)
  350 HAB = AB / 2.
      COTAB = 1./FTAN (HAB)
      XTAN1 = ATAN ((COTAB*SBMC)  /SBPC)
      XTAN2 = ATAN ((COTAB * CBMC) / CBPC)
      IF(CS -BS) 355,355,356
  355 BB = XTAN(XTAN2) + XTAN(XTAN1)
      CB = ABS(XTAN(XTAN2) -XTAN(XTAN1))
      GO TO 357
  356 CB = XTAN(XTAN2) + XTAN(XTAN1)
      BB = ABS(XTAN(XTAN2) - XTAN(XTAN1))
  357 BBMC = ABS (BB - CB) / 2.
      BBPC = (BB + CB) / 2.
      IF(RAD90 - BBMC) 360,370,370
  360 SBBMC = SIN(RAD18 - BBMC)
      GO TO 380
  370 SBBMC = SIN(BBMC)
  380 IF (RAD90 - BBPC) 390, 400,400
  390 SBBPC = SIN(RAD18 - BBPC)
      GO TO 410
  400 SBBPC = SIN(BBPC)
  410 TBMC = FTAN(BMC)
  440 TAB = (SBBPC * TBMC) / SBBMC
      IF(TAB) 450,460,460
  450 AS = 2. * ATAN(RAD18 + TAB)
      RETURN
  460 AS = 2. * ATAN(TAB)
      RETURN
      END
```

```
      FUNCTION XTAN(XT)
      IF(XT) 900,910,910
  900 XTAN = (180. * .0174533) + XT
      RETURN
  910 XTAN = XT
      RETURN
      END


      FUNCTION FTAN(D)
      IF (D - (90. * .0174533)) 600, 600, 610
  600 FTAN = SIN(D) / COS(D)
      RETURN
  610 FD = (180. * .0174533) - D
      FTAN = - (SIN(FD) / COS(FD))
      RETURN
      END

      SUBROUTINE ALPHA(V,I,J,K,L)
C
C ROUND OFF TO NEAREST TENTH
C
      V = V + .05555
C  IF V IS GREATER THAN OR EQUAL TO 100 , **.*.WILL PRINT
      IF(V - 1000.) 40,55,55
   55 I = 12
      J = 12
      K = 12
      L = 12
      RETURN
   40 I = 1
   45 V = V - 100.00001
      IF(V) 50, 46, 46
   46 I = I + 1
      GO TO 45
   50 J = 1
      V = V + 100.00001
  100 V = V- 10.00001
      IF(V) 300, 200,200
  200 J = J + 1
      GO TO 100
  300 K = 1
      V = V + 10.00001
  350 V = V - 1.00001
      IF(V) 500, 400, 400
  400 K = K + 1
      GO TO 350
  500 L = 1
      V = V + 1.00001
  450 V = V - .10001
      IF(V) 700, 600, 600
  600 L = L + 1
      GO TO 450
  700 RETURN
      END
```

```
      SUBROUTINE XLOOK(VAL, ID,IC,IB,PDEPH,CLAD,VVAL)
      DIMENSION VAL(40,40,1)
      IF(ID - 1) 5,5,10
    5 VVAL = VAL(ID,IC,IB)
      RETURN
   10 IF(ID -40) 15,5,5
   15 IF(IC -1) 5,5,20
   20 IF(IC -40) 30,5,5
   30 DEPH = PDEPH * .01
      IDEP = IFIX(DEPH)
      FDEP = FLOAT(IDEP)
      XFDEP =  DEPH - FDEP
      ICLAD = IFIX(CLAD)
      FCLAD = FLOAT(ICLAD)
      XCDIF = ABS(CLAD - FCLAD)
      IF(XFDEP - .5) 40, 40, 140
   40 IF(CLAD) 50, 60, 60
   50 IF(XCDIF - .5) 70, 70, 110
   60 IF(XCDIF - .5) 110, 110, 70
   70 VA1 = VAL(ID, IC, IB) - VAL(ID, IC - 1, IB)
      VA2 = VAL(ID - 1, IC, IB) - VAL(ID-1, IC-1, IB)
   80 IF(XCDIF - .5) 90, 90, 100
   90 FLAG = 1.0
      FFLAG = 1.0
      GO TO 130
  100 FLAG = -1.0
      FFLAG = 1.0
      GO TO 130
  110 VA1= VAL(ID, IC, IB) - VAL(ID, IC+1, IB)
      VA2 = VAL(ID-1,IC,IB) - VAL(ID-1, IC+1, IB)
  120 IF(XCDIF - .5) 90, 90, 100
  130 V1 = VAL(ID, IC, IB) + (XCDIF - .5)*VA1*FLAG
      V2 = VAL(ID-1, IC, IB) + (XCDIF - .5)*VA2*FLAG
      VVAL = V1 + (V1 - V2)*(XFDEP - .5)*FFLAG
      RETURN
  140 IF(CLAD) 150, 150, 160
  150 IF(XCDIF - .5) 170, 170, 210
  160 IF(XCDIF - .5) 210, 210, 170
  170 VA1 = VAL(ID,IC, IB) - VAL(ID, IC-1, IB)
      VA2 = VAL(ID+1, IC, IB) - VAL(ID+1, IC-1, IB)
  180 IF(XCDIF - .5) 190, 190, 200
  190 FLAG = 1.
      FFLAG = -1.0
      GO TO 230
  200 FLAG = -1.0
      FFLAG = - 1.0
      GO TO 230
  210 VA1 = VAL(ID, IC, IB) - VAL(ID, IC+1, IB)
      VA2 = VAL(ID+1,IC,IB) - VAL(ID+1, IC+1, IB)
  220 IF(XCDIF - .5) 190, 190, 200
  230 V1 = VAL(ID,IC, IB)   + (XCDIF - .5)*VA1*FLAG
      V2 = VAL(ID+1, IC, IB) + (XCDIF - .5)*VA2*FLAG
      VVAL = V1 + (V1 - V2)*(XFDEP - .5)*FFLAG
      RETURN
      END
```

APPENDIX IV

The effect of error in basement ages and pole of rotation on back-tracking and forward-tracking models in the central equatorial Pacific (ROPH, ESP)

Richard F. Johnson

Contents

Symbol Table

C	constant depth correction in subsidence equation
E	elevation above basin depth (z_∞) of ridge crest when $C = 0$
h	elevation above basin depth of a point on a track
h_o	initial elevation above basin depths of a point on a track
h_{CCD}	elevation above basin depth of carbonate compensation depth
k	time needed after creation for oceanic crust to subside to an elevation above basin depth of $e^{-1} \cdot E$
P	path of integration of ESP
$S(\phi,z)$	scalar field of sedimentation rates, such as Fig. 8
S_o	average sedimentation rate above carbonate compensation depth
S_x	sedimentation rate when tracks cross
t	time before present
t_b	basement age
t_{CCD}	time before present at which a track crosses carbonate compensation depth
t_x	time before present when tracks cross
T	thickness of sediment predicted by ESP
z	depth of water to the seafloor
z_{CCD}	depth at which rate of supply of calcium carbonate equals rate of dissolution
z_∞	basin depth (when $C = 0$); i.e., depth of very old oceanic crust
ε_{t_b}	error in basement age
ε_T	error in predicted thickness
ε_z	error in depth of a point on a track at a given age

ε_{λ^*} error in longitude of pole of rotation

ε_{ϕ} error in latitude of a point on a track at a given depth

ε_{ϕ^*} error in latitude of pole of rotation

ε_{ω^*} error in rate of rotation of pole

λ_o initial longitude of a point on a track

λ^* longitude of pole of rotation

λ_{p_o} initial longitude of a point on a track in coordinates of pole of rotation

ϕ latitude of a point on a track

ϕ_o initial latitude of a point on a track

ϕ^* latitude of pole of rotation

$\hat{\phi}_p$ colatitude of a point on a track in coordinates of pole of rotation

$\Delta\phi$ relative error in latitude of two points on two different tracks due to error in pole of rotation; gauged along a given contour of sedimentation rate

ω^* rate of rotation of pole

Introduction

There are four main sources of error in models ROPH and ESP: 1) error in basement ages; 2) error in selection of a pole of rotation*; 3) error in the equation we use to describe the subsidence of the seafloor as it moves outward from the spreading center; and 4) error in sediment data (viz., sedimentation rates, carbonate percentages, and sediment densities). In addition, ESP is also subject to a contouring error.

Error in our equation of subsidence, error in sediment data, and error in contouring are important but difficult to quantify. In sediment data, errors in assigning absolute ages to biostratigraphic boundaries, and errors in defining these boundaries in the sediment can have drastic effects, especially on sedimentation rates (see van Andel and others, 1975).

Because of the limited information available on the other sources of error, we will discuss in this report only the effects of errors in basement age and pole selection.

Model ROPH

Effect of error in basement ages

The effect on ROPH of error in basement ages is relatively easy to estimate. Let ε_{t_b} be the error in a given basement age. This error will cause an error in depth, $\varepsilon_z = \varepsilon_z(t)$, at each time step, t, along the tracks in ROPH. We now approximate the equation of subsidence of the seafloor by a simple exponential curve:

$$z = z(t) = z_{\infty} - E\cdot\exp(-(t_b - t)/k) + C, \qquad (1)$$

---

*Here and hereafter, "pole" means a vector pole of rotation, characterized by a latitude, ϕ^*, and a longitude, λ^*, and a rate, ω^*.

where

z = depth of the seafloor,

t = time before present,

z_∞ = basin depth, a constant,

E = ridge elevation, a constant,

t_b = basement age at $t = 0$,

k = time constant, and

$C = z_o - z_\infty + E \cdot exp(-t_b/k)$, a constant depth correction depending on the local depth, $z_o = z(0)$.

By simply guessing a fit to Fig. 2a of Sclater and others (1971, p. 7894), we find that approximate values for the constants of eq (1) are

z_∞ = 6000 m,

E = 3300 m, and

k = 40 m.y.

From eq (1), the error in depth, ε_z, due to an error in basement age, ε_{t_b}, must be

$$\varepsilon_z = \varepsilon_z(t) = z(t)\Big]_{t_b + \varepsilon_{t_b}} - z(t)\Big]_{t_b}$$

$$= \left[E \cdot \exp(-(t_b - t)/k) - E \cdot \exp(-t_b/k)\right] \cdot \left[1 - \exp(-\varepsilon_{t_b}/k)\right]$$

$$\cong (z_o - z) \cdot \varepsilon_{t_b}/k, \text{ for } \varepsilon_{t_b} << k. \tag{2}$$

The fractional elevation error has the particularly simple expression,

$$\varepsilon_z/(z_o - z) = \varepsilon_{t_b}/k. \tag{3}$$

For example, at a depth 1000m below the ridge crest, a 4 m.y. error in basement age will result in an error in backtracked depth of 100m.

Van Andel and Bukry (1973) give estimates of the confidence limits for the basement ages of 12 of the DSDP sites used in this study (74, 75, 77, 78, 79, 80, 82, 159, 160, 161, 162, and 163). These confidence limits range from about ±1 m.y. for hole 82 to ±7 m.y. for holes 74 and 163. From eq (3) then, the elevation error theoretically ranges from 2% for hole 82 to nearly 20% for holes 74 and 163. For hole 163, the error could be as high as ±400 m at the ridge crest; this probably represents a maximum error among the 23 DSDP sites of this study. Berger (1973) obtained a similar value graphically.

Effect of an error in pole of rotation

The effect of an error in choice of the pole of rotation is more complicated than the effect of an error in basement age. An error in the pole displaces tracks on the latitude-depth-of-water grid (Fig. 1) right or left. The amount of the displacement varies along a track's length and among tracks. For a given track, the displacement is zero at the initial latitude and depth and a maximum at the final latitude and depth.

If we use eq (1) to relate time to depth, we can describe a track by its latitude, $\phi = \phi(z;\phi^*, \lambda^*, \omega^*, \phi_o, \lambda_o, t_b)$, as a function of depth (the independent variable) and the parameters, ϕ^*, λ^*, ω^*, ϕ_o, λ_o, and t_b, where, in addition to the symbols already defined, ϕ_o and λ_o are the latitude and longitude at $t = 0$. From spherical trigonometry, we can deduce this function to be

$$\phi = \arcsin\left[\sin\phi^*\cdot\cos\hat{\phi}_p + \cos\phi^*\cdot\sin\hat{\phi}_p\cdot\cos(\lambda_{p_o} + \omega^*\cdot t)\right] \quad (4)$$

where, in the simplest case,

$$\hat{\phi}_p = \arccos\left[\sin\phi^*\cdot\sin\phi_o + \cos\phi^*\cdot\cos\phi_o\cdot\cos(\lambda^* - \lambda_o)\right]$$

$$\lambda_{p_o} = \arcsin\left[\cos\phi_o\cdot\sin(\lambda^* - \lambda_o)/\sin\hat{\phi}_p\right]$$

$$t = k\cdot\log\left[(z_\infty + C - z)/E\right] + t_b.$$

Here $\hat{\phi}_p$ and λ_{p_o} are the colatitude and initial longitude of a given track in the coordinates of the pole of rotation; this longitude is measured from a prime meridian passing through the positions of the poles of rotation and daily spin.

An error in the pole of rotation, ε_{ϕ^*}, ε_{λ^*}, or ε_{ω^*}, causes an error in track latitude,

$$\begin{aligned}\varepsilon_\phi(z;\phi^*,\lambda^*,\omega^*,\phi_o,\lambda_o,t_b,\varepsilon_{\phi^*},\varepsilon_{\lambda^*},\varepsilon_{\omega^*}) = \\ \phi(z;\phi^*+\varepsilon_{\phi^*},\lambda^*+\varepsilon_{\lambda^*},\omega^*+\varepsilon_{\omega^*},\phi_o,\lambda_o,t_b) \\ -\ \phi(z;\phi^*,\lambda^*,\omega^*,\phi_o,\lambda_o,t_b).\end{aligned} \quad (5)$$

When the error in the pole is small, we can approximate ε_ϕ by the differential,

$$d\phi = \frac{\partial\phi}{\partial\phi^*}d\phi^* + \frac{\partial\phi}{\partial\lambda^*}d\lambda^* + \frac{\partial\phi}{\partial\omega^*}d\omega^*. \quad (6)$$

The differentials, $d\phi^*$, $d\lambda^*$, and $d\omega^*$, are now the errors in the pole.

Table 4.1 gives some typical values for the partial derivatives in eq (6) for the DSDP sites used in this report. The size of these derivatives indicates the sensitivity of the tracks to small changes in the choice of the pole of rotation.

For tracks no longer than 40 m.y., a shift in the position of the pole by a degree of latitude in any direction will displace the latitude of the tracks by less than a degree. Thus, the tracks included in this study are stable; nothing violent occurs by shifting the pole slightly.

Also, note from Table 4.1 that the more eastern holes (see Table I) are insensitive to errors in pole latitude; that increasing pole longitude decreases track latitude; that increasing pole latitude tends to increase track latitude; and that errors in rotation rate of $.1^{\circ}$/m.y. have the same magnitude of effect as shifting the pole by a distance of 1° of latitude.

In lieu of confidence limits for our tracks, we offer Table 4.2. This table shows the range of track latitudes produced from five published poles of rotation:

Morgan (1972)	67°N, 73°W, $.85^{\circ}$/m.y.
Clague and Jarrard (1973)	72°N, 83°W, $.9^{\circ}$/m.y.
Clague and Jarrard (1973)*	69°N, 68°W, $.9^{\circ}$/m.y.
Winterer (1973)**	67°N, 45°W, 1.1°/m.y.
Minster and others (1974)***	67°N, 59°W, $.83^{\circ}$/m.y.

(The pole used for ESP and ROPH is 72°N, 83°W, $.81^{\circ}$/m.y.) Unfortunately, only Clague and Jarrard (1973) have published confidence limits for their pole, and their limits, according to Jarrard (personal communication), are not calculated from reliable statistics.

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*This determination omitted the "Line Cross" trend. Also, the rate we show here is a time average of what they published, 1.3°/m.y. for 0-20 m.y. BP and $.5^{\circ}$/m.y for 20-40 m.y. BP.

**Winterer's rotation is relative to the athenosphere.

***We assume Minster's instantaneous pole holds for the past 40 m.y.

For the holes in Table 1, Winterer's pole consistently yielded the minimum track latitudes of Table 4.2; Clague and Jarrard's western pole consistently yielded the maximum track latitudes. The pole we use in this study produces more northerly tracks than the majority of the published poles.

Note also from Table 4.2 that the range of track latitudes varies by a factor of 2 or 3 from hole to hole; that the range increases more or less linearly with age; and that the range is as much as 10° at 40 m.y. It is clear from this last fact that today any estimate of paleolatitude for older sediments in the central equatorial Pacific is unreliable.

Model ESP

To evaluate the effect of error in basement ages and pole of rotation for model ESP, we recall first that ESP's main function is to calculate thickness, T, from the integral,

$$T = \int_P S(\phi,z)\ dt \tag{7}$$

$S(\phi,z)$ is the scalar field of sedimentation rates found by smoothing data along tracks calculated by ROPH; P is the path of integration, which in fact is a track given by eq (4).

Errors in pole selection and basement age affect ESP's calculation of thickness in two ways: 1) Erroneous tracks calculated by ROPH will give erroneous contours of $S(\phi,z)$ (contours such as those of Fig. 8); 2) erroneous tracks calculated by ESP will give erroneous paths of integration.

However, in those applications where ESP's tracks are identical to ROPH's, such as in the present study, these two kinds of errors tend to cancel each other. This is especially true in the case of an error in selection of a pole of rotation, as discussed below.

Effect of error in basement ages

Errors in basement ages affect ESP primarily as errors in the paths of integration. The effect of error in basement ages on ROPH contours is presumably lessened by smoothing.

Consequently, thickness errors, ε_T, caused by errors in basement age, ε_{t_b}, can be estimated easily. To good precision, these thickness errors are given by

$$\varepsilon_T = \frac{\partial T}{\partial t_b} dt_b = \frac{\partial}{\partial t_b}\left[\int_P S(\phi,z)\, dt\right] dt_b. \qquad \varepsilon_{t_b} \approx dt_b \tag{8}$$

Because of the abruptness of the carbonate compensation depth (see Fig. 8), we can approximate $S(\phi,z)$ as a step-function in depth: Let $S(\phi,z)$ be a constant, S_o, for all depths above the carbonate compensation depth, z_{CCD}. Let $S(\phi,z)$ be zero below the carbonate compensation depth.

With this approximation, eq (7) becomes

$$T = S_o \cdot (t_b - t_{CCD}),$$

where, from eq (1),

$$t_{CCD} = t_b + k\cdot\log((z_o - z_{CCD} + E\cdot\exp(-t_b/k))/E),$$

t_{CCD} being the time at which a track crosses the carbonate compensation depth.

We can now perform the differentiation in eq (8):

$$\varepsilon_T = S_o \cdot E \cdot \exp(-t_b/k) \cdot dt_b/(z_\infty + C - z_{CCD}). \quad (9)$$

Also, the fractional error in thickness must be

$$\varepsilon_T/T = -E \cdot \exp(-t_b/k)/((z_\infty + C - z_{CCD}) \cdot \log((z_\infty + C - z_{CCD})/E)) \cdot dt_b \quad (10)$$

If we let $h = h(t)$ be the height of a point above the basin depth, z_∞, these equations have a simpler appearance:

$$\varepsilon_T = S_o \cdot (h_o/h_{CCD}) \cdot dt_b$$

and

$$\varepsilon_T/T = h_o/(h_{CCD} \cdot \log(h_{CCD}/E)) \cdot dt_b$$

$$= (h_o/h_{CCD}) \cdot (dt_b/(t_b - t_{CCD})),$$

where $h_o = h(0)$ and $h_{CCD} = h(t_{CCD})$.

Table 4.3 shows ε_T and ε_T/T for various values of z_{CCD} and basement age. The values of thickness error and percent thickness error are per million year error in basement age. Note that the percent error has a maximum when the compensation depth is both shallow and deep, that the percent error decreases with basement age, but that if the basement age is a constant 10% in error, the thickness may be in error by only 5-10% for 4000 m $\leq z_{CCD} \leq$ 5000 m.

DSDP hole 75 is an example in which the thickness computed by ESP has a large uncertainty because of basement age uncertainty.

To find the uncertainty in thickness from Table 4.3, we first note that, according to Fig. 8, ESP assumed a sedimentation rate for hole 75 of about 10 m/m.y. above the CCD. From Fig. 9, we note that ESP took z_{CCD} to be about 3700 m. Now, van Andel and Bukry (1973) give hole 75 confidence limits of ±4 m.y. Therefore, with a basement age of 37.5 m.y. (Table I), hole 75 has a thickness uncertainty, according to Table 4.3, of ±20%. In meters, this amounts to ±22 m: We must halve the meters of error because S_o for hole 75 is half that used in calculating Table 4.3.

Effect of error in pole of rotation

In model ESP, the effect of error in the pole of rotation depends on the relative error in the resulting tracks. That is, the effect depends on the relative displacement,

$$\begin{aligned}\Delta\phi &= \varepsilon_\phi(z_{(1)};\phi^*,\lambda^*,\omega^*,\phi_{o(1)},\lambda_{o(1)},t_{b(1)},\varepsilon_{\phi^*},\varepsilon_{\lambda^*},\varepsilon_{\omega^*})\\ &\quad - \varepsilon_\phi(z_{(2)};\phi^*,\lambda^*,\omega^*,\phi_{o(2)},\lambda_{o(2)},t_{b(2)},\varepsilon_{\phi^*},\varepsilon_{\lambda^*},\varepsilon_{\omega^*})\\ &= \varepsilon_{\phi(1)} - \varepsilon_{\phi(2)},\end{aligned}$$

where eq (5) defines the absolute error ε_ϕ and the subscripts (1) and distinguish one track from another. To be meaningful, we must gauge the relative displacement along a given contour of sedimentation rate; depths $z_{(1)}$ and $z_{(2)}$ are the depths that the contour cuts the two tracks.

Fig. 4.1 shows an example of relative error.

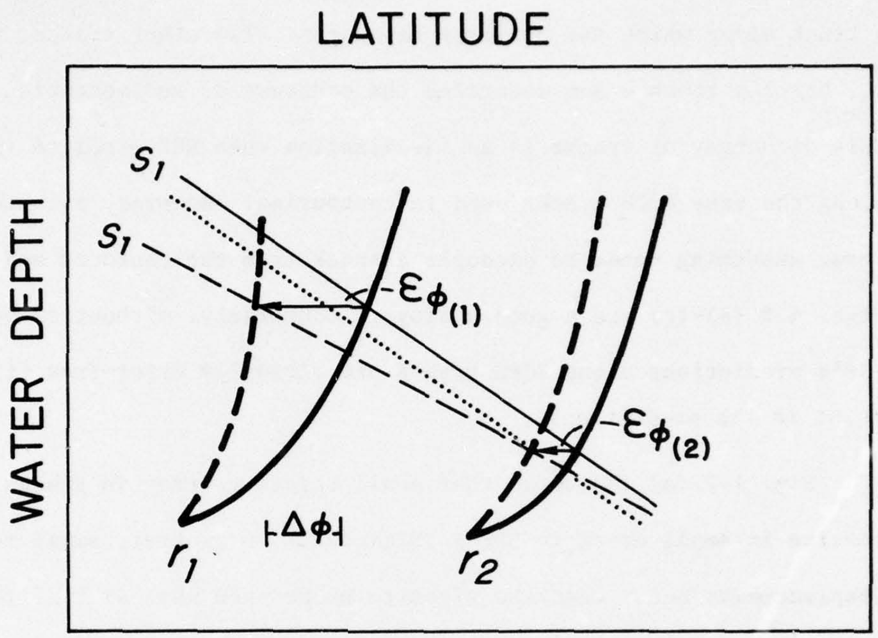


Fig. 4.1. Example of relative error between two tracks. $\Delta\phi$ is the relative error. The solid lines r_1 and r_2 are the true tracks; the dashed lines slightly displaced from the true tracks are the erroneous tracks. The solid line S_1 is a true contour of sedimentation rate; the dashed line is the same contour deduced from the erroneous tracks. The arrows show the relevant absolute errors, ε_ϕ. From the dotted line parallel to the true contour, we can graphically find $\Delta\phi$.

To demonstrate the significance of relative error to ESP, we present Figs. 4.2 (a)-(c). In these examples, track e represents a track along which ESP predicts thickness. Two other tracks, r_1 and r_2, bracket track e and determine the contours of sedimentation rate. This dichotomy of tracks is an idealization when ESP predicts thickness along the same ROPH tracks used in contouring. However, even in this case, smoothing tends to decouple a track from the contours and Figs. 4.2 (a)-(c) are a good analogy. Conversely, without smoothing, ESP's predictions along ROPH tracks are virtually error-free (i.e., the input is the prediction).

Fig. 4.2 (a) indicates that small relative error in tracks results in small error in ESP's thickness. In general, small relative displacements occur when the sites to be tracked have similar initial positions and similar basement ages. DSDP holes 70-74 and 77 fall in this category. In addition, any tracks that appear parallel will probably have small relative displacements. DSDP holes 159 and 160 and 161 and 78 are examples. As a consequence of the small relative error in tracks, ESP's thickness for most of these holes is insensitive to error in the pole of rotation. However, this statement assumes that the smoothed contours are not affected by those tracks with large relative errors. This is probably a valid assumption for holes 73-75, and 78 and 161.

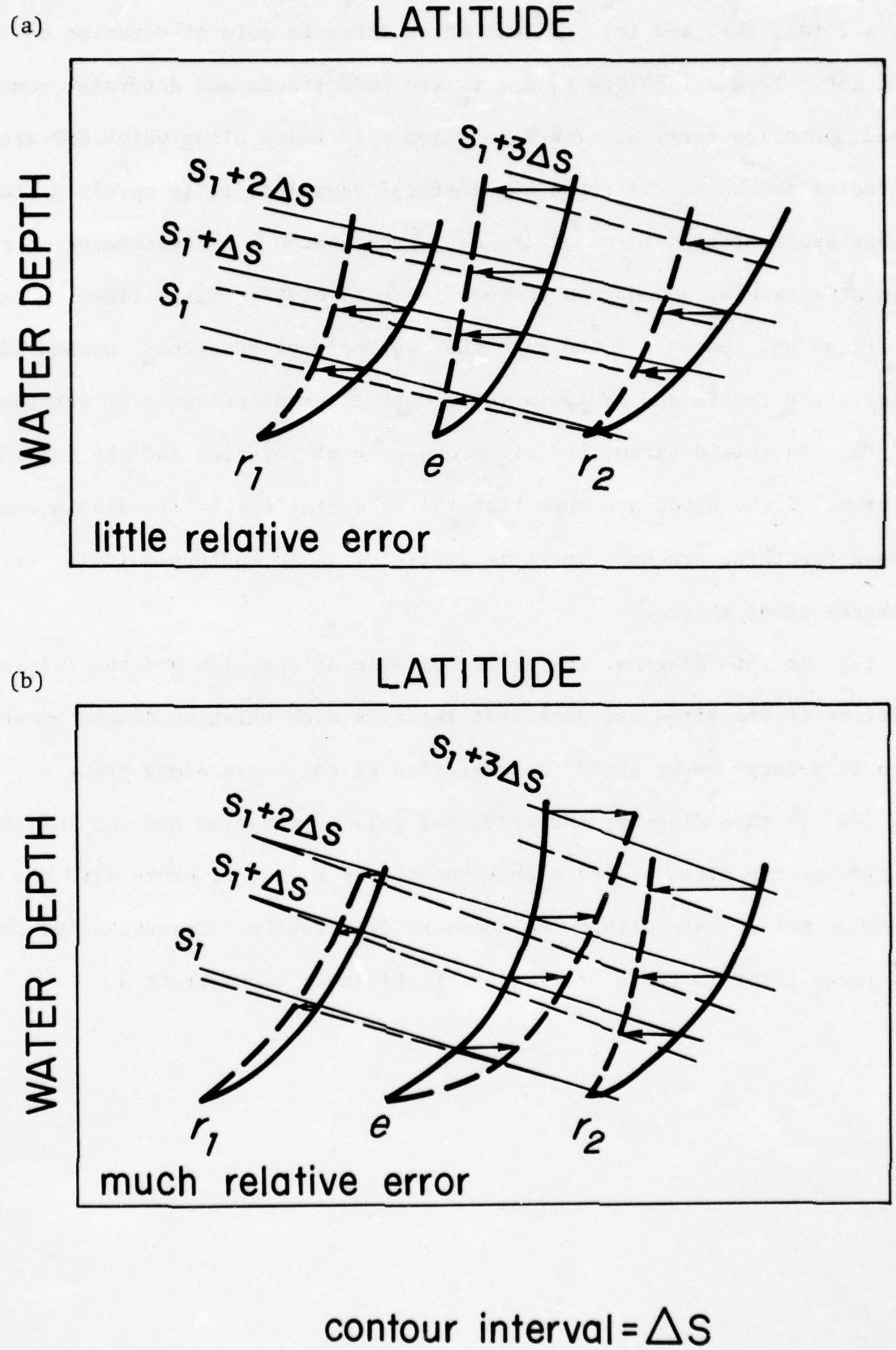
Figs. 4.2 (b) and (c) indicate the effect of large relative error in tracks. For such track error, ESP's predictions of thickness can be in error by a large amount. This presents us with the possibility that the differences in Table III are due to error in pole of rotation; or, in other words, that Fig. 2 represents Fig. 8 poorly because we have chosen the wrong pole.

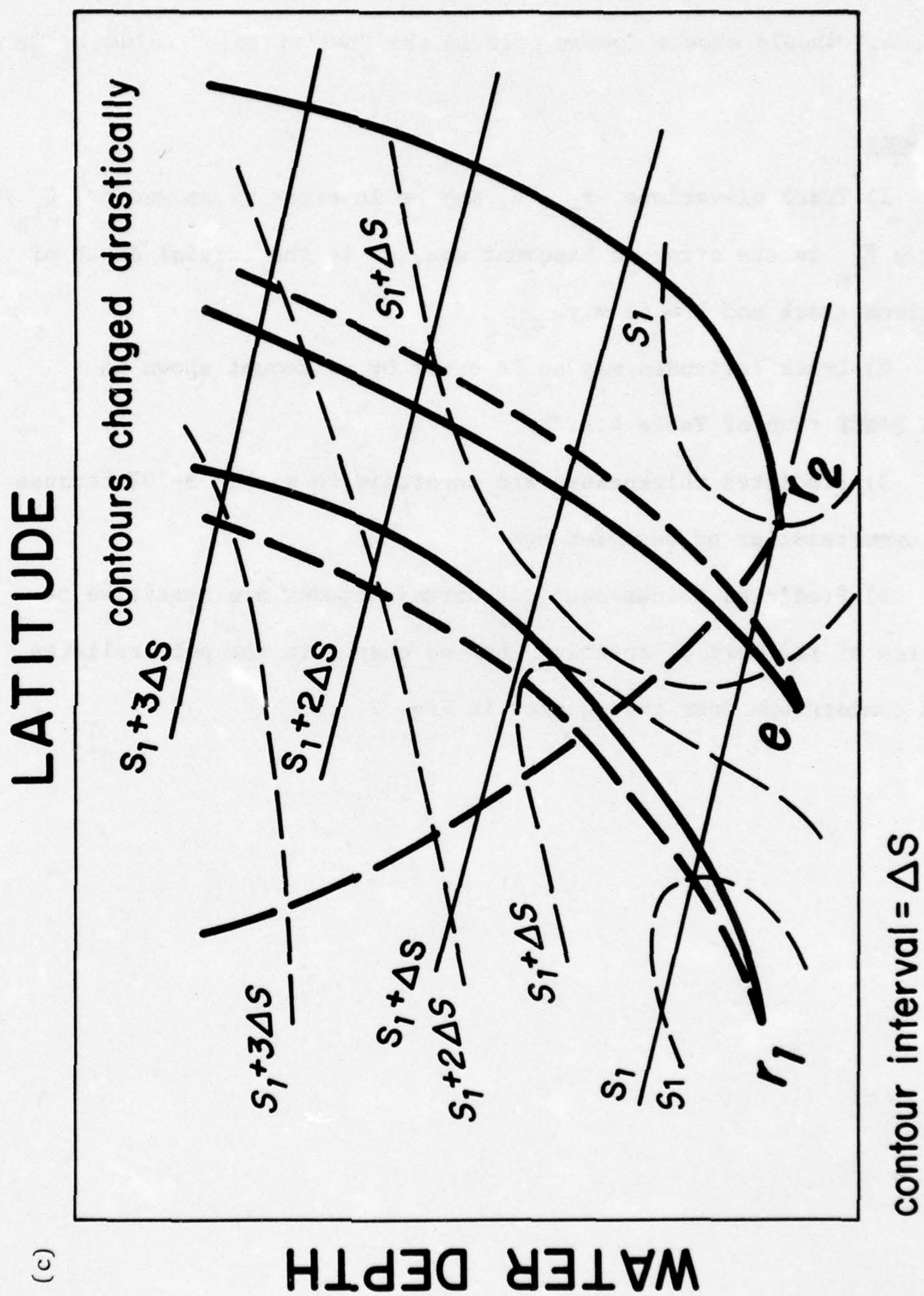
Fig. 4.2 (a), (b), and (c). Effect of an error in pole of rotation on model ESP. Tracks labelled r_1 and r_2 are ROPH tracks and determine contours of sedimentation rate, S. Track labelled e is track along which ESP attempts to predict thickness; in these hypothetical examples, it is merely a track, without sedimentation rates of its own. The contours of sedimentation rate begin at a rate S_1 and have a contour interval of ΔS. Solid lines indicate the tracks and contours found with the true pole of rotation. Dashed lines indicate the tracks and contours found with an erroneous pole of rotation.

(a) In this diagram, the erroneous pole of rotation and the initial positions of the sites are such that there is little relative displacement between the three tracks. There is little error in ESP's prediction of thickness along track e.

(b) In this diagram, the erroneous pole of rotation and the initial positions of the sites are such that there is much relative displacement. There is a large error in ESP's prediction of thickness along track e.

(c) In this diagram, the erroneous pole of rotation and the initial position of the sites are such that the tracks r_1 and r_2 cross with the erroneous pole. This alters the contours drastically. Consequently, there is a large error in ESP's prediction of thickness along track e.


(a)
LATITUDE
WATER DEPTH
$S_1+3\Delta S$
$S_1+2\Delta S$
$S_1+\Delta S$
S_1
r_1
e
r_2
little relative error
(b)
LATITUDE
WATER DEPTH
$S_1+3\Delta S$
$S_1+2\Delta S$
$S_1+\Delta S$
S_1
r_1
e
r_2
much relative error
contour interval = ΔS


LATITUDE
WATER DEPTH
contours changed drastically
contour interval = ΔS
S1+3ΔS
S1+2ΔS
S1+ΔS
S1
r1
r2
e

(c)

Table 4.4 is a test of this possibility. If a better pole exists (within the limits of our search), all four intersecting hole-pairs in Table 4.4 should show a common pole in the "better pole" column. They don't.

Summary

1) Track elevations, $z_o - z$, may be in error by an amount, ε_{t_b}/k, where ε_{t_b} is the error in basement age, z_o is the initial depth of a given track and $k \approx 40$ m.y.

2) Track latitudes may be in error by an amount shown in the RANGE rows of Table 4.2.

3) Predicted thicknesses are uncertain to within 5-20% because of uncertainties of basement age.

4) Predicted thicknesses for certain tracks are sensitive to choice of the pole of rotation, but no change in the pole relieves the contortions near the equator in Fig. 2.

Table 4.1 Typical values of the partial derivatives of track latitude, ϕ. This table indicates the sensitivity of tracks to changes in the choice of the pole of rotation. We computed these partial derivatives by differentiating eq (4) and using a pole of rotation of 72^{o}N, 83^{o}W, $.81^{o}$/m.y. The values are typical for poles within 10^{o} of latitude and $.2^{o}$/m.y. of the one we used.

The derivative, $\frac{\partial\phi}{\partial\lambda^*}$, has been divided by cos ϕ^* so that it can be compared to $\frac{\partial\phi}{\partial\phi^*}$ on a distance to distance basis. Thus, the units of $\frac{\partial\phi}{\partial\lambda^*}$ and $\frac{\partial\phi}{\partial\phi^*}$ are degrees of latitude per degree of latitude. The units of $\frac{\partial\phi}{\partial\omega^*}$ are degrees of latitude per degree of rotation per m.y.

DERIVATIVES
OF HOLE LATITUDE

HOLE	WITH RESPECT TO POLE	TIME (MY B.P.) 5	10	15	20	25	30	35	40
65	LATITUDE	0.08	0.15	0.22	0.29	0.35	0.42	0.48	0.54
	LONGITUDE	-0.19	-0.20	-0.20	-0.21	-0.23	-0.25	-0.28	-0.31
	RATE	-1.55	-3.08	-4.59	-6.06	-7.45	-8.76	-9.95	-11.02
66	LATITUDE	0.05	0.11	0.18	0.24	0.30	0.36	0.42	0.48
	LONGITUDE	-0.19	-0.21	-0.23	-0.25	-0.28	-0.32	-0.36	-0.40
	RATE	-1.52	-2.99	-4.40	-5.72	-6.93	-8.02	-8.97	-9.75
68	LATITUDE	-0.01	0.01	0.03	0.04	0.05	0.06	0.06	0.06
	LONGITUDE	-0.08	-0.15	-0.22	-0.29	-0.36	-0.43	-0.50	-0.57
	RATE	-0.47	-0.76	-0.86	-0.77	-0.49	-0.02	0.64	1.48
69	LATITUDE	0.02	0.09	0.14	0.20	0.26	0.31	0.36	0.40
	LONGITUDE	-0.15	-0.18	-0.21	-0.25	-0.30	-0.34	-0.39	-0.45
	RATE	-1.41	-2.73	-3.95	-5.04	-5.98	-6.77	-7.38	-7.81
70	LATITUDE	0.00	0.06	0.11	0.16	0.20	0.24	0.28	0.32
	LONGITUDE	-0.13	-0.17	-0.22	-0.27	-0.33	-0.38	-0.44	-0.50
	RATE	-1.24	-2.36	-3.33	-4.15	-4.80	-5.26	-5.52	-5.58
71	LATITUDE	-0.00	0.05	0.10	0.15	0.19	0.24	0.27	0.31
	LONGITUDE	-0.14	-0.18	-0.23	-0.28	-0.34	-0.39	-0.45	-0.51
	RATE	-1.24	-2.36	-3.33	-4.14	-4.78	-5.23	-5.48	-5.53
72	LATITUDE	-0.02	0.03	0.08	0.13	0.17	0.21	0.25	0.28
	LONGITUDE	-0.16	-0.20	-0.25	-0.31	-0.36	-0.42	-0.48	-0.54
	RATE	-1.22	-2.30	-3.24	-4.00	-4.59	-4.98	-5.17	-5.15
73	LATITUDE	-0.03	0.02	0.06	0.11	0.15	0.19	0.22	0.25
	LONGITUDE	-0.17	-0.22	-0.27	-0.32	-0.38	-0.44	-0.50	-0.56
	RATE	-1.19	-2.25	-3.15	-3.88	-4.42	-4.76	-4.89	-4.81

DERIVATIVES (CONTD)

HOLE	WITH RESPECT TO POLE	5	10	15	20	25	30	35	40
		TIME (MY B.P.)							
	LATITUDE	-0.10	-0.06	-0.01	0.03	0.07	0.10	0.13	0.15
75	LONGITUDE	-0.23	-0.28	-0.34	-0.39	-0.45	-0.52	-0.58	-0.65
	RATE	-1.14	-2.13	-2.95	-3.57	-4.00	-4.21	-4.19	-3.93
	LATITUDE	-0.03	0.02	0.06	0.10	0.14	0.17	0.21	0.23
77	LONGITUDE	-0.15	-0.20	-0.25	-0.31	-0.37	-0.43	-0.50	-0.56
	RATE	-1.12	-2.09	-2.89	-3.52	-3.96	-4.19	-4.22	-4.03
	LATITUDE	-0.01	0.03	0.07	0.11	0.14	0.17	0.20	0.22
78	LONGITUDE	-0.11	-0.17	-0.22	-0.28	-0.35	-0.41	-0.48	-0.54
	RATE	-1.01	-1.86	-2.53	-3.03	-3.34	-3.45	-3.36	-3.05
	LATITUDE	-0.04	-0.00	0.03	0.06	0.09	0.11	0.13	0.14
79	LONGITUDE	-0.12	-0.18	-0.24	-0.31	-0.37	-0.44	-0.51	-0.58
	RATE	-0.88	-1.59	-2.11	-2.44	-2.56	-2.48	-2.18	-1.67
	LATITUDE	-0.05	-0.02	0.02	0.05	0.07	0.09	0.11	0.12
80	LONGITUDE	-0.14	-0.19	-0.26	-0.32	-0.39	-0.45	-0.52	-0.59
	RATE	-0.88	-1.58	-2.10	-2.41	-2.52	-2.41	-2.09	-1.55
	LATITUDE	-0.06	-0.03	-0.02	-0.00	0.01	0.01	0.02	0.01
82	LONGITUDE	-0.10	-0.17	-0.24	-0.31	-0.38	-0.45	-0.52	-0.59
	RATE	-0.53	-0.87	-1.00	-0.93	-0.65	-0.17	0.53	1.43
	LATITUDE	-0.00	0.04	0.07	0.10	0.13	0.16	0.18	0.20
159	LONGITUDE	-0.10	-0.16	-0.22	-0.28	-0.34	-0.41	-0.48	-0.54
	RATE	-0.90	-1.64	-2.20	-2.58	-2.77	-2.77	-2.56	-2.15
	LATITUDE	0.01	0.06	0.10	0.15	0.19	0.22	0.26	0.29
160	LONGITUDE	-0.10	-0.15	-0.21	-0.26	-0.32	-0.38	-0.44	-0.51
	RATE	-1.13	-2.13	-2.97	-3.64	-4.14	-4.45	-4.56	-4.48

D E R I V A T I V E S (C O N T D)

HOLE	WITH RESPECT TO POLE	TIME (MY B.P.) 5	10	15	20	25	30	35	40
	LATITUDE	0.03	0.09	0.14	0.19	0.24	0.29	0.33	0.37
162	LONGITUDE	-0.10	-0.14	-0.18	-0.23	-0.28	-0.33	-0.39	-0.44
	RATE	-1.30	-2.49	-3.55	-4.47	-5.23	-5.82	-6.24	-6.46
	LATITUDE	0.03	0.09	0.15	0.20	0.26	0.31	0.36	0.40
163	LONGITUDE	-0.12	-0.15	-0.19	-0.23	-0.28	-0.32	-0.37	-0.43
	RATE	-1.38	-2.67	-3.84	-4.89	-5.79	-6.53	-7.09	-7.47
	LATITUDE	0.05	0.12	0.18	0.24	0.30	0.36	0.42	0.47
164	LONGITUDE	-0.12	-0.14	-0.16	-0.19	-0.22	-0.26	-0.30	-0.35
	RATE	-1.49	-2.92	-4.28	-5.53	-6.68	-7.69	-8.55	-9.25
	LATITUDE	0.08	0.15	0.21	0.28	0.34	0.41	0.47	0.53
166	LONGITUDE	-0.20	-0.20	-0.21	-0.22	-0.24	-0.27	-0.29	-0.33
	RATE	-1.54	-3.08	-4.57	-6.01	-7.38	-8.65	-9.81	-10.83
	LATITUDE	0.08	0.14	0.21	0.28	0.34	0.40	0.47	0.53
168	LONGITUDE	-0.14	-0.15	-0.16	-0.17	-0.19	-0.22	-0.25	-0.28
	RATE	-1.54	-3.07	-4.55	-5.98	-7.32	-8.57	-9.70	-10.70

Table 4.2. Ranges of track latitude produced by five published poles of rotation. This table indicates some of the uncertainty in back-tracked paleolatitudes in the central equatorial Pacific.

Rows labelled MAX show the maximum latitude at a given time (m.y.b.p.) among the five tracks. Rows labelled MIN show the minimum latitude among the five tracks. Rows labelled RANGE show MAX minus MIN. Positive values indicate northern latitude, negative values southern latitude for MAX and MIN entries. The range is the absolute value of the difference.

LATITUDE RANGE

HOLE		AGE (MY) 5	10	15	20	25	30	35	40
	MAX	2.96	1.57	0.19	-1.17	-2.52	-3.83	-5.10	-6.32
65	MIN	2.69	0.92	-0.96	-2.92	-4.95	-7.03	-9.15	-11.30
	RANGE	0.27	0.66	1.15	1.75	2.43	3.21	4.06	4.98
	MAX	1.02	-0.34	-1.66	-2.95	-4.20	-5.40	-6.54	-7.61
66	MIN	0.50	-1.47	-3.50	-5.59	-7.72	-9.86	-12.01	-14.14
	RANGE	0.51	1.13	1.84	2.64	3.52	4.47	5.47	6.53
	MAX	16.26	15.89	15.62	15.44	15.35	15.35	15.45	15.65
68	MIN	14.92	13.23	11.65	10.19	8.88	7.71	6.69	5.84
	RANGE	1.34	2.67	3.97	5.24	6.47	7.65	8.77	9.81
	MAX	4.71	3.47	2.27	1.13	0.06	-0.95	-1.88	-2.74
69	MIN	3.93	1.81	-0.33	-2.47	-4.61	-6.73	-8.80	-10.82
	RANGE	0.79	1.66	2.60	3.61	4.67	5.78	6.92	8.08
	MAX	5.20	4.12	3.10	2.16	1.30	0.52	-0.17	-0.77
70	MIN	4.19	2.05	-0.08	-2.18	-4.23	-6.22	-8.12	-9.92
	RANGE	1.00	2.07	3.19	4.34	5.53	6.73	7.94	9.15
	MAX	3.33	2.25	1.24	0.30	-0.56	-1.34	-2.02	-2.62
71	MIN	2.32	0.18	-1.95	-4.05	-6.10	-8.08	-9.98	-11.78
	RANGE	1.00	2.07	3.19	4.35	5.54	6.74	7.96	9.16
	MAX	-0.68	-1.74	-2.72	-3.63	-4.46	-5.20	-5.84	-6.39
72	MIN	-1.71	-3.85	-5.97	-8.06	-10.09	-12.05	-13.92	-15.68
	RANGE	1.03	2.11	3.25	4.43	5.63	6.85	8.08	9.29
	MAX	-3.01	-4.04	-5.00	-5.88	-6.68	-7.38	-7.99	-8.50
73	MIN	-4.06	-6.20	-8.31	-10.38	-12.40	-14.33	-16.17	-17.89
	RANGE	1.05	2.15	3.31	4.50	5.72	6.95	8.18	9.39
	MAX	-7.31	-8.32	-9.25	-10.10	-10.86	-11.52	-12.09	-12.56
74	MIN	-8.38	-10.51	-12.62	-14.67	-16.66	-18.57	-20.37	-22.06
	RANGE	1.07	2.19	3.37	4.57	5.81	7.05	8.28	9.50
	MAX	-13.57	-14.55	-15.45	-16.26	-16.98	-17.60	-18.12	-18.53
75	MIN	-14.66	-16.78	-18.87	-20.91	-22.88	-24.75	-26.52	-28.15
	RANGE	1.09	2.24	3.43	4.65	5.90	7.15	8.40	9.62
	MAX	-0.55	-1.52	-2.40	-3.20	-3.91	-4.53	-5.06	-5.48
77	MIN	-1.66	-3.78	-5.86	-7.89	-9.84	-11.70	-13.45	-15.08
	RANGE	1.11	2.26	3.46	4.68	5.92	7.16	8.39	9.60
	MAX	7.01	6.16	5.38	4.69	4.09	3.58	3.17	
78	MIN	5.84	3.76	1.75	-0.20	-2.05	-3.80	-5.44	
	RANGE	1.18	2.39	3.63	4.89	6.14	7.38	8.60	

LATITUDE RANGE (CONTD)

HOLE		AGE(MYBP) 5	10	15	20	25	30	35	40
	MAX	1.72	0.98	0.33	-0.23	-0.69			
79	MIN	0.48	-1.52	-3.45	-5.29	-7.02			
	RANGE	1.24	2.50	3.78	5.06	6.33			
	MAX	-1.78	-2.52	-3.17	-3.72	-4.18			
80	MIN	-3.03	-5.03	-6.96	-8.79	-10.51			
	RANGE	1.24	2.51	3.79	5.07	6.34			
	MAX	2.07	1.65						
82	MIN	0.74	-1.01						
	RANGE	1.33	2.66						
	MAX	11.49	10.73	10.05	9.46	8.96			
159	MIN	10.26	8.24	6.29	4.43	2.67			
	RANGE	1.23	2.49	3.76	5.03	6.29			
	MAX	10.67	9.70	8.79	7.96	7.22	6.56	5.99	5.52
160	MIN	9.58	7.45	5.36	3.33	1.36	-0.52	-2.31	-3.98
	RANGE	1.10	2.24	3.43	4.63	5.86	7.08	8.30	9.49
	MAX	9.10	8.03	7.02	6.08	5.22	4.44	3.75	3.14
161	MIN	8.09	5.95	3.82	1.72	-0.32	-2.30	-4.20	-6.00
	RANGE	1.01	2.08	3.20	4.36	5.54	6.74	7.95	9.14
	MAX	13.69	12.55	11.47	10.46	9.52	8.65	7.87	7.17
162	MIN	12.75	10.60	8.45	6.33	4.24	2.21	0.24	-1.64
	RANGE	0.94	1.95	3.02	4.13	5.28	6.45	7.63	8.81
	MAX	9.99	8.77	7.61	6.50	5.46	4.49	3.59	2.78
163	MIN	9.15	7.02	4.88	2.73	0.60	-1.49	-3.54	-5.52
	RANGE	0.83	1.75	2.73	3.77	4.86	5.98	7.13	8.30
	MAX	11.85	10.52	9.23	7.98	6.78	5.63	4.55	3.53
164	MIN	11.24	9.20	7.12	4.99	2.85	0.70	-1.43	-3.54
	RANGE	0.61	1.32	2.12	2.99	3.93	4.93	5.98	7.07
	MAX	2.37	0.98	-0.39	-1.75	-3.07	-4.37	-5.62	-6.82
166	MIN	2.06	0.24	-1.67	-3.65	-5.71	-7.80	-9.94	-12.08
	RANGE	0.31	0.74	1.28	1.91	2.63	3.44	4.32	5.26
	MAX	9.27	7.89	6.52	5.17	3.85	2.57	1.34	0.15
168	MIN	8.92	7.07	5.13	3.12	1.04	-1.07	-3.21	-5.36
	RANGE	0.35	0.82	1.39	2.05	2.81	3.64	4.54	5.51

Table 4.3. Estimated error in predicted thickness due to error in basement age. The rows labelled ERROR are the estimated thickness errors in meters for each million-year error in basement age. The rows labelled PERCENT are the estimated percent thickness errors. The column labelled ZCCD is the carbonate compensation depth, z_{CCD}. The errors in this table were calculated from eqs (9) and (10) with S_o = 20 m/m.y., E = 3300 m, k = 40 m.y., and C = 0.

To find the uncertainty in predicted thickness at any site, use the local z_{CCD} determined from Fig. 9, or use the local average sedimentation rate, multiply the error in meters from this table by the ratio of the local rate and 20 m/m.y.; this correction is unnecessary for the percent error.

AD-A032 008 SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CALIF F/G 8/10
BACKTRACKING AND FORWARD-TRACKING OF SEDIMENTS IN THE EAST EQUA--ETC(U)
OCT 76 J L MATTHEWS, R F JOHNSON, W H BERGER N00014-75-C-0152

UNCLASSIFIED SIO-REF-76-16 NL

3 OF 3

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END

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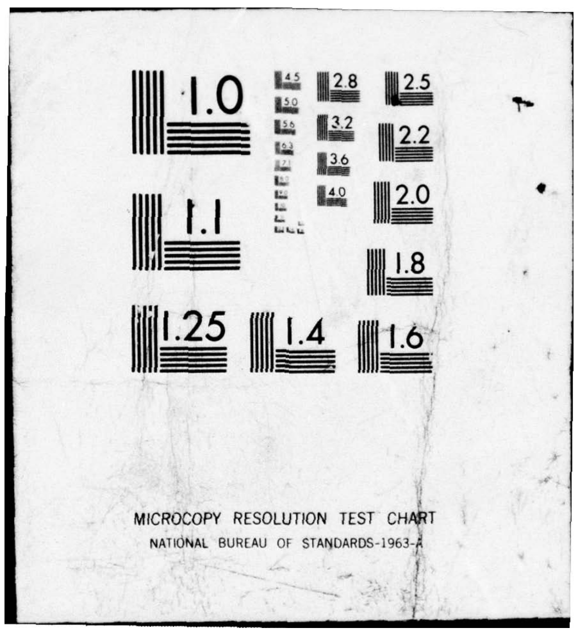
1.0
4.5
5.0
5.6
6.3
2.8
3.2
3.6
4.0
2.5
2.2
2.0
1.1
1.8
1.25
1.4
1.6
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

THICKNESS ERROR

BASEMENT AGE (MY)

ZCCD (METERS)		10	20	30	40	50	60	70	80	90	100	110	120
3000	ERROR	17	13	10	8	6	5	4	3	2	2	1	1
	PERCENT	22	18	14	11	8	6	5	4	3	2	2	1
3500	ERROR	21	16	12	10	8	6	5	4	3	2	2	1
	PERCENT	9	7	6	4	3	3	2	2	1	1	1	1
4000	ERROR	26	20	16	12	9	7	6	4	3	3	2	2
	PERCENT	6	5	4	3	2	2	1	1	1	1	1	0
4500	ERROR	34	27	21	16	13	10	8	6	5	4	3	2
	PERCENT	5	4	3	3	2	2	1	1	1	1	0	0
5000	ERROR	51	40	31	24	19	15	11	9	7	5	4	3
	PERCENT	5	4	3	3	2	2	1	1	1	1	0	0
5500	ERROR	103	80	62	49	38	29	23	18	14	11	8	7
	PERCENT	7	5	4	3	3	2	2	1	1	1	1	0

Table 4.4 "Better poles of rotation for four pairs of intersecting DSDP tracks. Column S_x gives the sedimentation rates (m/m.y.) for each track of the hole pair at the point of intersection of the tracks. Column t_x gives the ages (m.y.b.p.) of intersection. S_x and t_x are from Fig. 4 and result from a pole of rotation, 72°N, 83°W, .81°/m.y.

We found the "better" times of crossing, t_x, by displacing by eye one track in each pair relative to the other such that the resulting local sedimentation pattern agreed more with the general pattern of Fig. 8 and such that the S_x were more nearly equal. Given these t_x, we found the "better" poles by searching the tables in the addendum to this appendix. The possible "better" poles that we found are indicated by a rate and position, the position symbolized as follows:

h = high latitude (73-75°N)

l = low latitude (63-65°N)

m = middle latitude (66-72°N)

E = easterly longitude (40-50°W)

W = westerly longitude (100-110°W)

M = middle longitude (60-90°W)

r = wide range of possible latitudes and longitudes

DSDP Hole pair	S_x	t_x	Better t_x	Better rate(^{o}/m.y.)	Pole position
70,79	18,36	29,9	18 or less, 2 or less	.6	1M,mE, or 1E
				.8	mM,E, or 1M
				1.0	r except W
71,79	64,16	24,19	32,21	.6	h
				.8	hW
				1.0	hW
72,80	32,2	11,10	20,14	.6	mW,mM, or 1E
				.8	mW or hM
				1.0	hW or hE
77,80	12,7	19,3	28,21	.6	r
				.8	mW or h
				1.0	1W or hW

<u>Addendum</u>

This addendum contains tables of the variation of the time of track intersections as a function of pole of rotation and basement age for four pairs of DSDP holes: holes 70 and 79, 71 and 79, 72 and 80, and 77 and 80. The addendum also contains the computer program which generated the tables.

Numbers in the body of the tables are the ages (m.y.b.p.) of intersection for the given hole pair. For example, with a pole rate of $.6^{\circ}$/m.y., pole latitude of 65°N, and pole longitude of 90°W (-90), the hole pair 70, 79 will intersect at three possible times, depending on basement age error:

21,0
24,3
27,7.

Ages to the left of the commas refer to ages along the track of the hole listed first (70, in this case); ages to the right refer to the hole listed second (79, in this case).

In the first row of the triplet, the intersections are for tracks computed with a basement age 10% high for the first hole and 10% low for the second hole. In the second row of the triplet, the intersections are for tracks computed with no error, using basement ages shown in Table I. In the third row of the triplet, the intersections are for tracks computed with a basement age 10% low for the first hole and 10% high for the second hole.

When tracks do not intersect, the tables indicate this as: **,**.

VARIATION OF TRACK INTERSECTIONS
AS A FUNCTION OF POLE POSITION AND RATE
AND OF ERROR IN BASEMENT AGE

HOLE 70 LAT 6.34 LONG -140.36 DEPTH 5059
HOLE 79 LAT 2.55 LONG -121.57 DEPTH 4566

RATE= 0.60

LAT \ LONG	-110	-100	-90	-80	-70	-60	-50	-40
	,	35, 9	21, 0	**,**	**,**	**,**	**,**	**,**
65	**,**	39,14	24, 3	**,**	**,**	**,**	**,**	**,**
	,	43,20	27, 7	**,**	**,**	**,**	**,**	**,**
	,	44,14	27, 4	**,**	**,**	**,**	**,**	**,**
67	**,**	48,20	30, 7	**,**	**,**	**,**	**,**	**,**
	,	52,26	35,13	23, 3	**,**	**,**	**,**	**,**
	,	56,20	33, 8	24, 2	**,**	**,**	**,**	**,**
69	**,**	**,**	37,13	26, 4	**,**	**,**	**,**	**,**
	,	**,**	42,20	31,10	23, 4	**,**	**,**	**,**
	,	**,**	41,13	29, 6	23, 1	**,**	**,**	**,**
71	**,**	**,**	46,19	33,10	25, 4	20, 0	**,**	**,**
	,	**,**	53,26	40,18	31,11	26, 6	24, 4	24, 4
	,	**,**	52,19	38,11	30, 6	26, 4	24, 2	23, 2
73	**,**	**,**	58,24	43,17	34,11	29, 7	28, 6	27, 6
	,	**,**	**,**	51,25	43,20	37,15	35,14	37,15
	,	**,**	**,**	49,17	39,12	34, 9	32, 7	32, 7
75	**,**	**,**	**,**	54,23	45,18	40,14	37,13	38,13
	,	**,**	**,**	**,**	53,26	49,24	48,24	48,24

BASEMENT
AGES USED

67,22
61,25
55,27

INTERSECTIONS FOR HOLES 70/79, CONT'D

RATE= 0.80

LONG / LAT	-110	-100	-90	-80	-70	-60	-50	-40
	,	**,**	**,**	**,**	**,**	**,**	**,**	**,**
65	**,**	22, 1	**,**	**,**	**,**	**,**	**,**	**,**
	,	25, 6	**,**	**,**	**,**	**,**	**,**	**,**
	,	26, 3	**,**	**,**	**,**	**,**	**,**	**,**
67	**,**	29, 7	**,**	**,**	**,**	**,**	**,**	**,**
	,	35,13	**,**	**,**	**,**	**,**	**,**	**,**
	,	62,22	**,**	**,**	**,**	**,**	**,**	**,**
69	**,**	58,24	**,**	**,**	**,**	**,**	**,**	**,**
	,	53,27	21, 2	**,**	**,**	**,**	**,**	**,**
	,	**,**	23, 1	**,**	**,**	**,**	**,**	**,**
71	**,**	**,**	27, 5	**,**	**,**	**,**	**,**	**,**
	,	**,**	32,11	**,**	**,**	**,**	**,**	**,**
	,	**,**	33, 8	**,**	**,**	**,**	**,**	**,**
73	**,**	**,**	40,15	22, 1	**,**	**,**	**,**	**,**
	,	**,**	51,26	27, 7	**,**	**,**	**,**	**,**
	,	**,**	62,22	29, 6	**,**	**,**	**,**	**,**
75	**,**	**,**	**,**	35,11	23, 2	**,**	**,**	**,**
	,	**,**	**,**	45,22	30, 9	22, 3	**,**	**,**

BASEMENT
AGES USED

67,22
61,25
55,27

INTERSECTIONS FOR HOLES 70/79, CONT'D

RATE= 1.00

LONG LAT	-110	-100	-90	-80	-70	-60	-50	-40
	,	61,22	**,**	**,**	**,**	**,**	**,**	**,**
65	**,**	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	56,20	**,**	**,**	**,**	**,**	**,**	**,**
67	**,**	56,24	**,**	**,**	**,**	**,**	**,**	**,**
	,	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	21, 0	**,**	**,**	**,**	**,**	**,**	**,**
69	**,**	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	**,**	**,**	**,**	**,**	**,**	**,**	**,**
71	**,**	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	**,**	**,**	**,**	**,**	**,**	**,**	**,**
73	**,**	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	**,**	27, 7	**,**	**,**	**,**	**,**	**,**
	,	**,**	**,**	**,**	**,**	**,**	**,**	**,**
75	**,**	**,**	**,**	**,**	**,**	**,**	**,**	**,**
	,	**,**	**,**	19, 0	**,**	**,**	**,**	**,**

BASEMENT
AGES USED

67,22
61,25
55,27

VARIATION OF TRACK INTERSECTIONS
AS A FUNCTION OF POLE POSITION AND RATE
AND OF ERROR IN BASEMENT AGE

HOLE 71 LAT 4.47 LONG -140.31 DEPTH 4419
HOLE 79 LAT 2.55 LONG -121.57 DEPTH 4566

RATE= 0.60

LONG / LAT	-110	-100	-90	-80	-70	-60	-50	-40
	24,15	21,14	19,13	19,13	19,13	19,13	20,13	21,14
65	24,17	22,16	21,15	20,15	21,15	21,15	22,16	24,17
	24,19	23,18	22,17	22,17	23,18	24,18	25,19	27,20
	26,16	23,14	21,14	20,13	20,13	20,14	21,14	23,14
67	27,18	24,16	22,16	22,16	22,16	23,16	23,16	25,17
	27,20	25,19	24,18	24,18	24,19	25,19	26,20	28,21
	30,17	25,15	23,14	22,14	22,14	22,14	22,14	24,15
69	30,19	26,18	24,17	23,16	24,16	24,17	25,17	26,18
	30,21	27,20	26,19	25,19	26,19	27,20	28,20	30,21
	34,19	28,16	25,15	23,15	23,15	23,15	24,15	25,15
71	34,21	28,18	26,18	25,17	25,17	26,17	26,18	28,18
	34,23	30,21	28,20	27,20	28,20	28,21	29,21	31,22
	42,21	31,17	27,16	26,16	25,15	25,15	26,16	27,16
73	42,23	32,20	29,19	28,18	28,18	28,18	28,18	30,19
	42,26	33,23	31,22	30,21	30,21	30,22	31,22	33,23
	,	36,19	31,18	29,17	28,16	28,16	28,16	29,17
75	**,**	37,22	33,20	31,19	30,19	30,19	31,19	32,20
	,	39,25	35,23	33,23	33,23	33,23	34,23	36,24

BASEMENT
AGES USED

67,22
61,25
55,27

INTERSECTIONS FOR HOLES 71/79, CONT'D

RATE= 0.80

LONG / LAT	-110	-100	-90	-80	-70	-60	-50	-40
	18,12	16,12	16,11	15,11	16,11	16,12	17,12	18,12
65	18,14	17,13	17,13	17,13	17,13	18,14	19,14	20,15
	18,15	18,15	18,15	18,15	19,16	20,16	21,17	23,18
	20,13	18,12	17,12	16,12	16,12	17,12	18,12	19,13
67	20,15	18,14	18,14	18,14	18,14	19,14	20,15	21,15
	20,16	19,16	19,16	19,16	20,16	21,17	22,17	24,18
	22,14	19,13	18,13	18,12	17,12	18,12	19,13	20,13
69	23,16	20,15	19,14	19,14	19,14	20,15	21,15	22,16
	22,17	21,17	21,17	21,17	21,17	22,17	23,18	25,19
	26,16	21,14	20,13	19,13	19,13	19,13	20,13	21,14
71	26,17	22,16	21,15	20,15	20,15	21,15	22,16	23,16
	26,19	23,18	23,18	22,17	23,18	24,18	25,19	26,19
	51,22	24,15	22,14	21,14	20,13	21,14	21,14	22,14
73	31,20	25,17	23,16	22,16	22,16	23,16	23,16	25,17
	30,21	26,19	24,19	24,18	24,19	25,19	26,20	28,20
	,	28,16	24,15	23,15	22,14	23,14	23,15	24,15
75	**,**	29,19	26,17	25,17	24,17	25,17	25,17	26,18
	,	30,21	27,20	27,20	27,20	28,20	28,21	30,21

BASEMENT
AGES USED

67,22
61,25
55,27

INTERSECTIONS FOR HOLES 71/79, CONT'D

RATE= 1.00

LONG / LAT	-110	-100	-90	-80	-70	-60	-50	-40
	14,11	14,10	13,10	13,10	14,10	14,11	15,11	16,11
65	15,12	14,12	14,12	14,12	15,12	16,13	17,13	18,14
	15,13	15,13	15,14	16,14	17,14	18,15	19,16	20,16
	16,12	15,11	14,11	14,11	14,11	15,11	15,11	16,12
67	16,13	15,12	15,12	15,12	16,13	16,13	17,13	18,14
	16,14	16,14	16,14	17,14	17,15	18,15	20,16	21,17
	51,22	16,12	15,11	15,11	15,11	16,11	16,12	17,12
69	18,14	17,13	16,13	16,13	17,13	17,13	18,14	19,14
	18,15	17,15	17,15	18,15	18,15	19,16	21,17	22,17
	,	18,12	16,12	16,12	16,12	16,12	17,12	18,12
71	49,24	18,14	17,13	18,13	18,14	18,14	19,14	20,15
	20,16	19,16	19,15	19,16	20,16	20,16	22,17	23,18
	,	20,13	18,13	18,12	17,12	18,12	18,13	19,13
73	**,**	21,15	19,14	19,14	19,14	20,14	20,15	21,15
	23,18	21,17	20,16	21,17	21,17	22,17	23,18	24,19
	,	23,15	21,14	20,13	19,13	19,13	20,13	21,14
75	**,**	24,16	22,16	21,15	21,15	21,15	22,16	23,16
	,	25,19	23,18	23,18	23,18	24,18	25,19	26,19

BASEMENT
AGES USED

67,22
61,25
55,27

VARIATION OF TRACK INTERSECTIONS
AS A FUNCTION OF POLE POSITION AND RATE
AND OF ERROR IN BASEMENT AGE

HOLE 77 LAT 0.48 LONG -133.23 DEPTH 4291
HOLE 80 LAT -0.96 LONG -121.55 DEPTH 4399

RATE= 0.60

LONG LAT	-110	-100	-90	-80	-70	-60	-50	-40
	32,19	23,16	20,14	19,14	18,13	18,13	18,13	19,14
65	32,21	25,18	22,17	21,16	21,16	21,16	21,16	22,17
	31,24	27,22	25,21	24,20	25,20	25,21	26,21	27,22
	39,20	25,17	22,15	21,14	20,14	19,14	19,14	20,14
67	37,23	27,19	24,18	22,17	22,17	22,17	22,17	23,17
	35,25	29,23	27,21	26,21	26,21	26,21	27,22	28,22
	,	28,18	23,16	22,15	21,14	20,14	20,14	21,15
69	**,**	30,21	26,19	24,18	24,18	23,18	24,18	24,18
	,	32,24	29,23	27,22	27,22	27,22	28,22	29,23
	,	31,19	26,17	24,16	22,15	22,15	22,15	22,15
71	**,**	33,22	28,20	26,19	25,19	25,18	25,18	26,19
	,	35,25	31,24	30,23	29,23	29,23	29,23	30,23
	,	36,20	28,18	26,17	24,16	24,16	23,16	24,16
73	**,**	37,23	31,21	29,20	27,19	27,19	27,19	28,20
	,	**,**	34,25	32,24	31,24	31,24	31,24	32,24
	,	**,**	32,19	29,18	27,17	26,17	25,17	26,17
75	**,**	**,**	35,22	31,21	30,21	29,20	29,20	30,21
	,	**,**	**,**	34,25	33,25	33,24	33,24	33,25

BASEMENT
AGES USED

46,21
42,23
37,25

INTERSECTIONS FOR HOLES 77/80, CONT'D

RATE= 0.80

LONG / LAT	-110	-100	-90	-80	-70	-60	-50	-40
	24,16	18,13	16,12	15,12	15,12	15,12	16,12	16,12
65	24,18	19,15	18,15	17,14	17,14	18,14	18,15	19,15
	23,19	21,18	20,18	20,18	20,18	21,18	22,19	23,19
	,	20,14	18,13	16,12	16,12	16,12	16,12	17,12
67	28,20	21,16	19,15	19,15	18,15	19,15	19,15	20,16
	26,21	23,19	22,19	21,18	21,18	22,19	23,19	24,20
	,	22,15	19,14	18,13	17,13	17,13	17,13	18,13
69	**,**	24,18	21,16	20,16	19,15	20,16	20,16	21,16
	35,25	25,21	24,20	23,19	23,19	23,20	24,20	25,21
	,	25,17	21,15	19,14	18,13	18,13	18,13	19,13
71	**,**	27,19	23,17	21,16	21,16	21,16	21,16	22,17
	,	28,22	26,21	24,20	24,20	25,20	25,21	26,21
	,	29,18	23,16	21,14	20,14	20,14	20,14	20,14
73	**,**	31,21	26,19	23,18	22,17	23,17	23,17	23,17
	,	33,24	28,22	27,21	26,21	26,21	27,22	28,22
	,	39,20	27,17	23,16	22,15	21,15	21,15	21,15
75	**,**	**,**	29,20	26,19	25,18	24,18	24,18	25,18
	,	**,**	32,24	29,23	29,23	28,22	29,23	29,23

BASEMENT
AGES USED

46,21
42,23
37,25

INTERSECTIONS FOR HOLES 77/80, CONT'D

RATE= 1.00

LONG LAT	-110	-100	-90	-80	-70	-60	-50	-40
	,	15,12	14,11	13,11	13,10	14,11	14,11	14,11
65	37,23	16,14	15,13	15,13	15,13	15,13	16,13	17,14
	18,16	17,16	17,15	17,16	18,16	19,17	20,17	21,18
	,	16,12	15,11	14,11	14,11	14,11	14,11	15,11
67	**,**	17,14	16,14	16,13	16,13	16,13	17,14	18,14
	20,17	19,17	18,16	18,16	19,17	19,17	21,18	22,18
	,	18,13	16,12	15,12	15,11	15,11	15,12	15,12
69	**,**	19,15	18,14	17,14	17,14	17,14	18,14	18,15
	35,25	20,18	20,17	20,17	20,17	20,18	21,18	22,19
	,	21,14	18,13	16,12	16,12	16,12	16,12	16,12
71	**,**	22,17	19,15	19,15	18,15	18,15	19,15	19,15
	,	23,19	21,18	21,18	21,18	22,18	23,19	23,20
	,	25,16	20,14	18,13	17,13	17,13	17,13	17,13
73	**,**	26,19	22,17	20,16	20,15	19,15	20,16	20,16
	,	27,21	24,20	23,19	23,19	23,19	24,20	25,20
	,	**,**	23,15	20,14	19,13	19,13	18,13	19,13
75	**,**	**,**	25,18	23,17	21,16	21,16	21,17	22,17
	,	35,25	27,22	26,21	25,20	25,20	26,21	26,21

BASEMENT
AGES USED

46,21
42,23
37,25

VARIATION OF TRACK INTERSECTIONS
AS A FUNCTION OF POLE POSITION AND RATE
AND OF ERROR IN BASEMENT AGE

HOLE 72 LAT 0.44 LONG -138.87 DEPTH 4326
HOLE 80 LAT -0.96 LONG -121.55 DEPTH 4399

RATE= 0.60

LAT \ LONG	-110	-100	-90	-80	-70	-60	-50	-40
	18,11	15,10	14, 9	14, 9	13, 9	14, 9	14, 9	15,10
65	18,12	16,11	15,11	15,11	15,10	15,11	16,11	17,12
	19,14	17,13	16,12	17,13	17,13	17,13	18,13	20,14
	19,12	17,10	15,10	15, 9	14, 9	14, 9	15, 9	16,10
67	20,13	17,12	16,11	16,11	16,11	16,11	17,11	18,12
	20,15	18,14	17,13	18,13	18,13	18,13	19,14	21,15
	22,13	18,11	16,10	16,10	15,10	15,10	16,10	17,10
69	22,14	19,13	18,12	17,12	17,12	17,12	18,12	19,13
	22,16	20,15	19,14	19,14	19,14	19,14	20,15	22,16
	25,14	20,12	18,11	17,11	17,10	17,10	17,10	18,11
71	25,16	21,14	19,13	19,13	18,12	18,12	19,13	20,13
	25,17	22,16	21,15	20,15	20,15	21,15	22,15	23,16
	29,16	23,13	20,12	19,11	18,11	18,11	18,11	20,12
73	30,18	24,15	21,14	21,13	20,13	20,13	21,13	22,14
	30,20	25,17	23,16	22,16	22,16	23,16	23,16	25,17
	36,18	26,14	23,13	21,12	20,12	20,12	20,12	22,12
75	36,20	28,17	24,15	23,15	22,14	22,14	23,14	24,15
	36,22	29,19	26,18	25,17	25,17	25,17	25,18	27,19

BASEMENT
AGES USED

63,21
58,23
52,25

INTERSECTIONS FOR HOLES 72/80, CONT'D

RATE= 0.80

LONG / LAT	-110	-100	-90	-80	-70	-60	-50	-40
	14, 9	12, 8	11, 8	11, 7	11, 8	11, 8	11, 8	12, 8
65	14,10	13, 9	12, 9	12, 9	12, 9	12, 9	13, 9	14,10
	14,11	13,11	13,10	13,10	14,11	14,11	15,12	16,12
	15,10	13, 9	12, 8	12, 8	12, 8	12, 8	12, 8	13, 8
67	15,11	14,10	13, 9	13, 9	13, 9	13, 9	14,10	15,10
	15,12	14,11	14,11	14,11	14,11	15,12	16,12	17,13
	16,10	14, 9	13, 9	12, 8	12, 8	12, 8	13, 8	14, 9
69	17,12	15,11	14,10	13,10	14,10	14,10	14,10	15,11
	17,13	16,12	15,12	15,11	15,12	16,12	17,13	18,13
	19,11	15,10	14, 9	13, 9	13, 9	13, 9	14, 9	14, 9
71	19,13	16,11	15,11	15,10	15,10	15,10	15,11	16,11
	19,14	17,13	16,12	16,12	17,13	17,13	18,13	19,14
	22,13	17,11	16,10	15, 9	15, 9	15, 9	15, 9	16,10
73	22,14	18,12	17,11	16,11	16,11	16,11	17,11	18,12
	22,16	19,14	18,13	18,13	18,13	18,14	19,14	20,15
	50,20	20,12	18,11	16,10	16,10	16,10	16,10	17,10
75	27,16	21,14	19,13	18,12	18,12	18,12	18,12	19,13
	26,18	22,16	20,15	20,14	19,14	20,15	21,15	22,16

BASEMENT
AGES USED

63,21
58,23
52,25

INTERSECTIONS FOR HOLES 72/80, CONT'D

RATE= 1.00

LONG / LAT	-110	-100	-90	-80	-70	-60	-50	-40
	11, 8	10, 7	9, 7	9, 7	9, 7	10, 7	10, 7	11, 7
65	11, 8	10, 8	10, 8	10, 8	10, 8	11, 8	11, 8	12, 9
	11, 9	11, 9	11, 9	11, 9	11, 9	12,10	13,10	14,11
	12, 8	11, 7	10, 7	10, 7	10, 7	10, 7	10, 7	11, 8
67	12, 9	11, 8	11, 8	11, 8	11, 8	11, 8	12, 9	13, 9
	13,10	12,10	12,10	12,10	12,10	13,10	14,11	15,11
	50,20	12, 8	11, 7	10, 7	10, 7	11, 7	11, 8	12, 8
69	13,10	12, 9	12, 9	11, 9	11, 9	12, 9	12, 9	13,10
	14,11	13,10	13,10	13,10	13,10	14,11	14,11	15,12
	,	13, 8	12, 8	11, 8	11, 8	11, 8	12, 8	12, 8
71	15,11	13,10	13, 9	12, 9	12, 9	13, 9	13,10	14,10
	15,12	14,11	14,11	14,11	14,11	15,11	15,12	16,12
	,	14, 9	13, 9	12, 8	12, 8	12, 8	13, 8	13, 9
73	**,**	15,11	14,10	13,10	13,10	14,10	14,10	15,11
	18,13	16,12	15,12	15,11	15,12	16,12	16,12	17,13
	,	16,10	15, 9	14, 9	13, 9	14, 9	14, 9	14, 9
75	**,**	17,12	16,11	15,10	15,10	15,11	16,11	16,11
	46,25	18,13	17,13	16,12	16,12	17,13	18,13	19,14

BASEMENT
AGES USED

63,21
58,23
52,25

```
FILE  2(KIND=PRINTER)
FILE  4(KIND=READER)

C*********************************************************************
C                                                                    *
C     THIS PROGRAM USES THE METHOD OF FALSE POSITION TO FIND THE     *
C     INTERSECTION OF A PAIR OF LATITUDE-DEPTH TRACKS.  IT DOES THIS *
C     FOR AN INPUTTED RANGE OF POLE RATES, LATITUDES AND LONGITUDES. *
C     IT REPEATS THIS FOR BASEMENT AGES WHICH DIFFER FROM THE INPUTTED *
C     AGES BY AN ERROR FACTOR, AGERR.  IN ONE CASE THE BASEMENT AGE OF *
C     ONE OF THE HOLES IS HIGH AND THE OTHER HOLE IS LOW; THE SECOND *
C     CASE IS VICE VERSA.                                            *
C     THE PRINT OUT LOOKS LIKE THIS:                                 *
C                                                                    *
C                   17,25              +ERROR,-ERROR                 *
C                   15,23           NO ERROR,NO ERROR                *
C                   12,20              -ERROR,+ERROR                 *
C                                                                    *
C     THE NUMBERS REPRESENT THE TIMES OF INTERSECTION (IN MILLIONS OF *
C     YEARS) OF THE FIRST AND SECOND HOLES INPUTTED, RESP.           *
C                                                                    *
C     NOTES:                                                         *
C         1)  WHEN AN INTERSECTION DOES NOT EXIST FOR THE GIVEN TRACKS, *
C             WE PRINT OUT  **,**.                                   *
C         2)  WHEN THE NUMBER OF ITERATIONS IN THE SOLUTION FOR THE  *
C             INTERSECTION EXCEEDS "LIMIT", WE PRINT OUT  99,99.     *
C         3)  BECAUSE OF LINE LENGTH LIMITATIONS, DO NOT ALLOW THE   *
C             NUMBER OF POSSIBILITIES OF LONGITUDE FOR THE POLE TO   *
C             EXCEED 17.                                             *
C                                                                    *
C*********************************************************************

      DIMENSION XLAO(2),ZO(2),TB(2),A(2),R1(2),R2(2),R3(2),XLOO(2)
     1 ,NHOLE(2),L(2),TE(3,2),AA(3,2),ITA1(3,20),ITA2(3,20)
      REAL LO
      COMMON PO,LO,TXX,PLA,PLO,XLAP,XLOPO,PI,C1,C2

C     STATEMENT FUNCTIONS
      T(J,Z)=TB(J)-((Z-A(J))/B)**2    %T IS AGE BY TREHU FORMULA
      D(Z)=R1(2)-R1(1)+R2(2)*COS(R3(2)+W*T(2,Z))-R2(1)*COS(R3(1)
     1                          +W*T(1,Z))
        %D IS THE DIFFERENCE IN THE SINE OF LATITUDE BETWEEN TWO
        %TRACKS AT DEPTH Z.
C     CONSTANTS
      PI=3.1415926536
      DTR=PI/180.
      B=348.          %TOPOGRAPHY CONSTANT
```

```
      AGERR=.1            %ERROR IN AGES
C     INPUT RANGE AND INCREMENTS FOR POLE RATE, LAT, AND LONG
      READ(4,108) W1,W2,DW,PLA1,PLA2,DPLA,PLO1,PLO2,DPLO,LIMIT
      IF(LIMIT.EQ.0) LIMIT=100
  108 FORMAT(11(F4.0,1X))
      ILO1=PLO1     +SIGN(.00001,PLO1)
      ILO2=PLO2     +SIGN(.00001,PLO2)
      IDLO=DPLO+.000001
      IN=IABS(ILO2-ILO1)/IDLO+1
C     CONVERT DEGREES TO RADIANS
      W1=DTR*W1
      W2=DTR*W2
      DW=DTR*DW
      PLA1=DTR*PLA1
      PLA2=DTR*PLA2
      DPLA=DTR*DPLA
      PLO1=DTR*PLO1
      PLO2=DTR*PLO2
      DPLO=DTR*DPLO

C     INPUT INITIAL LAT, LONG, DEPTH, AND AGE BASEMENT
    1 DO 2 I=1,2
      READ (4,100) XLAO(I),XLOO(I),TB(I),ZO(I) ,NHOLE(I)
  100 FORMAT(3F10.2,20X,F10.2,1X,I5    )
      IF (ZO(I) .EQ. 0.) CALL EXIT
    2 CONTINUE

C     OUTPUT HEADING
      WRITE(2,110)
  110 FORMAT(1H1)
      WRITE(2,106)
  106 FORMAT(28X, 'VARIATION OF TRACK INTERSECTIONS'/
     1 24X,  'AS A FUNCTION OF POLE POSITION AND RATE'/
     1 30X,'AND OF ERROR IN BASEMENT AGE'/)

C     CALCULATE RANGE OF BASEMENT AGES.
      DO 1000 ID=1,3
      TE(ID,1)=TB(1)*(1.-AGERR*FLOAT(ID-2))
      TE(ID,2)=TB(2)*(1.+AGERR*FLOAT(ID-2))
C     WE USE MORGAN'S CURVE FOR TOPOGRAPHIC SUBSIDENCE.  ARRAY AA IS THE
C     CONSTANT DEPTH CORRECTION.
      DO 1000 I=1,2
      AA(ID,I)=ZO(I)-B*SQRT(TE(ID,I))
 1000 CONTINUE

      DO 10 I=1,2
```

```
      WRITE(2,101)    NHOLE(I),XLAO(I),XLOO(I),ZO(I)
  101 FORMAT(21X,'HOLE',I4,3X,'LAT',F6.2,2X,'LONG ',F7.2,2X,
     1 'DEPTH ',I4)
C     DEGREES TO RADIANS
      XLAO(I)=DTR*XLAO(I)
      XLOO(I)=DTR*XLOO(I)
C     FIND NUMBER OF DIGITS IN HOLE NUMBER
      DO 5 N=1,10
      IF(NHOLE(I)/10**N .EQ. 0) GO TO 8
    5 CONTINUE
    8 L(I)=N
   10 CONTINUE
C
C     BEGIN CALCULATIONS.  LOOP THROUGH POSSIBLE ROATATION RATES,
C     POLE LATITUDES, BASEMENT AGES, AND POLE ROTATION LONGITUDES.
C

      DO 6500 W=W1,W2+.00000001,DW

C     WRITE COLUMN HEADING
      M=0
      IF (W.NE.W1) GO TO 1200
      WRITE(2,102) W/DTR+.0001,IN,(I,I=ILO1,ILO2,IDLO)
  102 FORMAT(//39X,'RATE=',F5.2//
     1 13X,'LONG',3X,*(1X,I4,1X)/
     1 10X,'LAT')
      GO TO 1250
C     NEW PAGE
 1200 WRITE(2,110)
      WRITE(2,107)  (L(I),NHOLE(I),I=1,2)
  107 FORMAT(10X,'INTERSECTIONS FOR HOLES',1X,I*,'/',I*,8H, CONT'D//)
      WRITE(2,102) W/DTR+.0001,IN,(I,I=ILO1,ILO2,IDLO)

 1250 DO 6000 PLA=PLA1,PLA2+.00000001,DPLA

      K=0
      M=M+1
      DO 5000 PLO=PLO1,PLO2+.0000001,DPLO
      K=K+1

      DO 2000 I=1,2
      LO=XLOO(I)
      PO=XLAO(I)
      CALL GRIND      %GRIND DOES MOST OF THE WORK
      R1(I)=COS(XLAP)*SIN(PLA)
      R2(I)=SIN(XLAP)*COS(PLA)
      R3(I)=XLOPO
```

```
2000 CONTINUE

     DO 5000 ID=1,3          %AGE ERROR LOOP

     DO 3000 I=1,2
     TB(I)=TE(ID,I)
     A(I)=AA(ID,I)
3000 CONTINUE

C    USE METHOD OF FALSE POSITION TO FIND CROSSING.

C    FIND FIRST TWO GUESSES:  THE LIMITS OF THE TRACKS.
     Z1=AMAX1(A(1),A(2))    %AMAX1 IS SYSTEM INTRINSIC TO FIND MAX
     Z2=AMIN1(Z0(1),Z0(2))  %AMIN1 IS SYSTEM INTRINSIC TO FIND MIN
     D1=D(Z1)
     D2=D(Z2)

C    IS THERE A CROSSING?
     IF(SIGN(1.,D1).EQ.SIGN(1.,D2)) GO TO 3700

     KOUNT=0
3100 KOUNT=KOUNT+1
     IF(ABS(D1).LT..001) GO TO 3801
     IF(ABS(D2).LT..001) GO TO 3802
     IF(KOUNT.GT.LIMIT) GO TO 3803
     Z3=Z1+(Z1-Z2)/(D2-D1)*D1           %NEW GUESS
     D3=D(Z3)
     IF(SIGN(1.,D3).EQ.SIGN(1.,D2) ) GO TO 3200    %WHICH SIDE?
     Z1=Z3
     D1=D3
     GO TO 3100
3200 Z2=Z3
     D2=D3
     GO TO 3100

3700 IT1=1.E9            %NO CROSSING
     IT2=1.E9
     GO TO 3850
3801 IT1=T(1,Z1)+.5      %CROSSING
     IT2=T(2,Z1)+.5
     GO TO 3850
3802 IT1=T(1,Z2)+.5      %CROSSING
     IT2=T(2,Z2)+.5
     GO TO 3850
3803 IT1=99              %COULDN'T FIND CROSSING FAST ENOUGH
     IT2=99
3850 ITA1(ID,K)=IT1
     ITA2(ID,K)=IT2
```

```
 5000 CONTINUE
C
C       OUTPUT
C
        IF(M.LT. 9) GO TO 5100
C       NEW PAGE
        WRITE(2,110)
        WRITE(2,107)  (L(I),NHOLE(I),I=1,2)
        WRITE(2,102)  W/DTR+.0001,IN,(I,I=ILO1,ILO2,IDLO)

 5100 DO 5500 ID=1,3
        GO TO (5110,5120,5130),ID
 5110 WRITE(2,104)  IN,(ITA1(ID,IK),ITA2(ID,IK),IK=1,IN)
  104 FORMAT(20X,*(1X,I2,',',I2))
        GO TO 5500
 5120 IQ=PLA/DTR         + SIGN(.000001,PLA)
        WRITE(2,103)  IQ,IN,(ITA1(ID,IK),ITA2(ID,IK),IK=1,IN)
  103 FORMAT(10X,I3,7X,*(1X,I2,',',I2))
        GO TO 5500
 5130 WRITE(2,105)  IN,(ITA1(ID,IK),ITA2(ID,IK),IK=1,IN)
  105 FORMAT(20X,*(1X,I2,',',I2)/)

 5500 CONTINUE

 6000 CONTINUE

        WRITE(2,117)
  117 FORMAT (//    40X,'BASEMENT'/40X,'AGES USED'/)
        DO 6300 ID=1,3
        J=2
        IF(TE(ID,2).GE.100.) J=3
        WRITE(2,118)  TE(ID,1)+.5,J,TE(ID,2)+.5
  118 FORMAT(40X,1X,I3,',',I*)
 6300 CONTINUE

 6500 CONTINUE

        GO TO 1
        END
```

```
      SUBROUTINE GRIND
      REAL LO,LPO,LX,LP1
      COMMON PO,LO,TM,PS,LX,PH,LPO,PI,C1,C2

C     THIS SUBROUTINE USES THE HALF ANGLE FORMULAS FROM SPHERICAL
C     TRIG TO CALCULATE THE LATITUDE AND LONGITUDE OF A POINT,
C     LO,PO, IN COORDINATES OF THE POLE.  THE POLE IS AT LX,PS.  THE
C     LATITUDE OF THE POINT IN PLATE POLE COORDINATES  IS PH, THE LONGI-
C     TUDE IS LPO.

      C3=SIN(.5*(LX-LO ))
      C5=SIN(.5*(PS+PO ))
      IF(C5.EQ.0.0) C5=1.0E-9
      C6=COS(.5*(PS+PO ))
      IF(C6.EQ.0.0) C6=1.0E-9
      C7=SIN(.5*(PS-PO ))
      C8=COS(.5*(PS-PO ))
      C9=C6/C5
      C10=COTAN(.5*(LX-LO ))
      W1=C10*C8/C5
      W2=C10*C7/C6
      C11= ATAN(W1)
      IF(C11.LT.0.) C11=C11+PI
      C12= ATAN(W2)
      IF(C12.LT.0.) C12=C12+PI
      C13=COS(C11)
      C14=COS(C12)
      IF(C14.EQ.0.0) C14=1.0E-9
      U=C9*C13/C14
      U=ATAN(U)
      IF(U.LT.0.) U=U+PI
      PH=2.*U
      LPO=C11+C12
      IF(LPO.GT.PI) LPO=2.*PI-LPO
      RETURN
      END
```

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Numerical models are used to show that sediment thicknesses younger than Eocene in the east equatorial Pacific can be predicted by specifying paleolatitude, paleodepth, and time. Error analysis shows the effect of mistakes in the estimate of basement age and pole position on prediction of rate of sedimentation.

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